



Needham Board of Health



AGENDA

Friday November 8, 2019

9:00 – 11:00 a.m.

**Charles River Room
Public Services Administration Building
500 Dedham Avenue, Needham MA 02492**

- **9:00 to 9:05 – Welcome & Review of Minutes (October 11th)**
- **9:05 to 9:35 – Staff Reports (October)**
- **9:35 to 9:50 – Synthetic Turf Fields and Enhanced Environmental Testing**
- **9:50 to 10:05 – Youth Tobacco and Vape Use in Needham; Open Board Discussion of Tobacco Vendor Density**
- **10:05 to 10:20 – Discussion of Governor's Four Month Ban on Vape Products, Recent Legal Developments and Needham BOH Policy re Vapes**
- **10:20 to 10:40 – Continued Board Discussion about Enforceable Agreement for Sewer Connection at 57 Walker Lane Septic System**
- **10:40 to 10:50 – FY 2021 Budget Discussion and BOH Priorities**
- **10:50 to 11:00 – Discuss BOH Meeting Times and Set Initial 2020 Meeting Dates and Times**
- **Other Items**
- **Adjournment**

(Please note that all times are approximate)



NEEDHAM BOARD OF HEALTH



Needham Board of Health Minutes October 11, 2019

Board members: Edward Cosgrove, PhD, Chair
Stephen Epstein, MD, MPP, Member
Christina S. Mathews, MPH, Member
Robert A. Partridge, MD, MPH, Member

Staff present: Timothy M. McDonald, Director of Health and Human Services; Tara Gurge, Assistant Director of Public Health; Diana Acosta; Dawn Stiller; Maryanne Dinell; Tiffany Zike; Karen Shannon; Michelle Iovino; Madeline Isenberg

Convene: Public Services Administration Building, 500 Dedham Avenue, Charles River Room

Dr. Cosgrove, Chair of the Board of Health, called the meeting to order at 9:01 AM.

Minutes

There were no comments on the minutes from September. **Ms. Matthews motioned to approve the minutes. Dr. Partridge seconded. The minutes were approved by unanimous vote.**

Staff reports

Traveling Meals Program – presented by Maryanne Dinell

There was a small reduction in delivered meals during September as compared to August, largely attributable to fewer overall days and a federal holiday in September.

Regional Substance Abuse Coordinator Report – presented by Diana Acosta

Ms. Diana Acosta and Ms. Tara Gurge attended the 2019 Annual Northeast FDA Food Protection Conference held on September 18-20th in Portsmouth, NH. They received a variety of up-to-date food safety information relevant to the responsibilities of the Environmental Health team, and also received some feedback on what to focus on for the upcoming FDA/AFDO grant application.

Ms. Acosta, Ms. Gurge and the Food Regulatory Program Analyst, Ms. Michelle Iovino, will be applying for the 2020 AFDO grant by October 15th. Funding is up to \$20,000 for food-safety projects related to the FDA Standards Project for a Category 2 grant. The team is looking to obtain funding to begin a food grading system and public educational campaign. The aim is to have all the standards set forth by the Food and Drug Administration's Voluntary National Retail Food Regulatory Programs Standards met by the end of 2020. Additionally, the team will also apply for a Category 3 training grant in the amount of \$3,000, which has been awarded in previous years. This grant allows funding for travel to educational conferences.

On September 24th, an administrative hearing was held with the owner and staff of The Rice Barn. Ms. Gurge, Ms. Acosta were present with Mr. Timothy McDonald, Ms. Tiffany Zike, and Ms. Donna

Carmichael. The purpose of this hearing was to discuss the on-going food safety issues that have been received by the Public Health Division which include an increased amount of food-borne illness complaints. The owner agreed to do the following: 1) Send additional staff members for ServSafe Food Manager and Food Allergy trainings at once which will be a condition of the issuance of the 2020 Food Establishment permit. 2) Immediately setting up on-going audit/trainings with food safety trainer, Maureen Lee, with MoJin Solutions, LLC. Contract was received on September 27th. 3) Maintain routine pest control inspections with Catseye Pest Control. The progress of the project will be routinely

Additionally, on the evening of September 24th, Governor Baker declared a Public Health Emergency and announced a temporary four month ban on the sale of all vape products. As soon as the order was received and after receiving guidance from the state, Ms. Acosta and Ms. Gurge worked to draft a notice that was sent out to all ten tobacco retail establishments. Site visits to all tobacco establishments known to sell vape products were conducted by Ms. Acosta to verify compliance. Ms. Gurge contacted the Medical RMD facility and Ms. Acosta conducted a site visit to verify that all vape products were removed from sale. All permitted establishments were found to be in compliance with the ban.

Policies, Safety at Home Program, and Grant Proposals – presented by Mr. McDonald

Staff members Lynn Schoeff and Rachael Cain have continued to develop policies of the Public Health Division and the Health & Human Services Department as a whole. Ms. Cain continues her work to ensure that the Safety at Home program is sustainable, and is working with Beth Israel Deaconess-Needham on the community health assessment which is a hospital requirement and will help the Public Health Division pursue its goal of accreditation.

Substance Use Prevention – Karen Shannon

Ms. Shannon provided a brief update on the Vaping Task Force which will begin its work in November and will be led by Ms. Sara Shine, the Director of Youth & Family Services. Ms. Shannon also provided an update on the 5th Quarter Program and the work of the SALSA (Students Advocating Life Without Substance Abuse) as it trains a new group of peer leaders to present on refusal skills in the 8th grade health classes.

Public Health Nursing Report – Tiffany Zike

Ms. Zike discussed the communicable disease for the month of September. Ms. Zike had a discussion on the EEE notification process that they experienced during the month and explained where Needham stands with the EEE risk.

Ms. Zike reported that the nurses are getting prepared for the flu season. They held a Lunch and Learn, “All about the Flu” at the Center at the Heights and have begun giving flu shots to staff. The first flu clinic was on Oct 10th, 2019. She reports that they also provided 10 Tdap immunizations to school children from China, that were visiting Needham schools. Ms. Zike also reported that in September they held a CPR class for Town employees and began a Matter of Balance class at the Center at the Heights. She reports the nurses have also been working on emergency management and plan development/review including a shelter walk through, Domestic violence awareness and education activities, and preparation for MRC activities and recertification process/enrollment of new members.

Regional Substance Abuse Coordinator Report – presented by Mr. McDonald

Mr. McDonald gave a brief update on the regional substance use prevention work, where Needham is a partner with Dedham, Norwood, and Westwood. The focus this fall is on providing TIPS training for

alcohol licensees to ensure responsible beverage service. This will be the first set of trainings since all four communities had staff (mainly public health and police) certified as TIPS trainers. This will provide a cost savings to the communities and allow them to offer more frequent TIPS trainings for vendors.

Substance Use Prevention in Needham – Deep Data Dive – Karen Shannon

Ms. Shannon presented an overview of the Substance Prevention Alliance of Needham (SPAN), the Needham Parent/Caregiver Survey, and the Risk Factors for Teen Substance Use in Needham.

The SPAN overview detailed its purpose as a community coalition, its structure which includes a steering committee and three action teams. Ms. Shannon explained that data informs the coalition's work and how it prioritizes the planning of prevention initiatives. Highlights of the 2018 Metro West Adolescent Health Survey (MWAHS) data touched on trends in self-reported substance use by Needham High School students.

Ms. Shannon shared that the 2019 Parent Survey, administered on line biennially since 2011 to parents and caregivers of students in grades 6 – 12, collects quantitative data for topics including: parent behaviors, attitudes, perceptions and beliefs around youth substance use. The 2019 Survey collected data from 613 parents/caregivers.

Ms. Shannon presented an abbreviated review of the Risk Factors for Teen Substance Use in Needham, created in summer 2019 by Madeleine Arthur, graduate intern from the B.U. School of Public Health. Using the 2018 MWAHS, Ms. Arthur analyzed the data for associations between substance use among Needham High School students and 16 risk factors. Highlights of this analysis include:

- 11th and 12th grade students are more likely than 9th and 10th grade students to use all substances (e.g. 4x more likely to use alcohol, 5x more likely to use marijuana, and 2.5x more likely to use electronic vaping products).
- Perception of risk is high for vaping yet students still choose to vape
- Those who reported depression and thoughts of suicide are more likely to use all substances, especially marijuana.

Discussion of Governor's Four Month Ban on Vape Products

The Board discussed the recently announced vape ban and its impact in Needham. Ms. Acosta and Ms. Gurge stated that all of Needham's tobacco vendors complied with the order to remove vape products from their shelves. The Board and the Public Health Division staff member discussed the timing for the Governor's ban and its expiration after four months, and reviewed options to limit youth access to, and use of, vape products. The Board discussed whether it should consider its own regulation of vaping, and whether to pursue a restriction of online sales to Needham's zip codes. The Board debated asking the Governor or the Attorney General to pursue a permanent online sales restriction, and discussed ways to better inform and educate the Needham community about the dangers of vaping. The Board resolved to work on a letter to the community and to continue its discussion next month.

Tobacco Compliance Check Update – Diana Acosta

Ms. Acosta provided the Board with an update on the September 26, 2019 Tobacco Compliance Check, where all vendors checked the undercover buyer's identification and passed the compliance check.

Status Update on 57 Walker Lane Septic System

Ms. Gurge and Mr. McDonald provided Board members with an update of the 57 Walker Lane Septic System. This was a continuation of the discussion at the July and September Board meetings about the failed septic system at this property and the requirement that the owner connect with Town sewer rather than replace the septic. With the support of the Engineering Division in Needham's Department of Public Works, Ms. Gurge will be able to provide the Board with an independent estimate of the costs to connect to sewer. It is hoped that this independent estimate will resolve the disagreement between the Town engineer's cost estimate for the work (\$30,000-\$40,000) and estimates the owner has received from contractors (\$150,000).

FY 2020 Budget Discussion and BOH Priorities

Mr. McDonald facilitated a Board discussion about its priorities and its resource needs. The Board members mentioned the need for Town funding to support the Substance Prevention Alliance of Needham (SPAN) and its work with the coming expiration of Needham's 10-year federal grant. The Board also highlighted the need for a full-time Director of Public Health, and voiced its frustration that this position is still unfunded nearly 36 months after the creation of the Health & Human Services Department. The Board asked to continue its discussion at next month's meeting, and asked Mr. McDonald to arrange for the Town Manager to attend a future Board of Health meeting.

Upcoming Board of Health meetings:

Friday, November 8, from 9:00-11:00 a.m., Charles River Room of the PSAB

Tuesday, December 10, from 7:00-9:00 p.m., Charles River Room of the PSAB

Mr. McDonald will send Board members a survey to inform a discussion at the November Board meeting about 2020 meeting dates and times.

Dr. Epstein motioned to adjourn the meeting at 11:00 AM. Dr. Partridge seconded. Approved unanimously, the meeting adjourned at 11:00 AM.



NEEDHAM PUBLIC HEALTH DIVISION



Unit: Public Health Nursing

Month: October 2019

Staff member: Tiffany Zike & Donna Carmichael

Activities and Accomplishments

Activity	Notes
Flu Clinics	Held 2 Town wide clinics and one residential center clinic – about 550 immunizations given.
MRC	Held MRC Meet and Greet. Spoke at the Rotary Club- Rotary donated 100 blankets to the Emergency Management Shelter Supplies
Cable Presentations	Flu clinics and Teal Pumpkin Project
Matter of Balance	Finished teaching 8 weeks of Matter of Balance class
Extreme Weather Presentation	Extreme Cold Weather presentation at the Center at the Heights
Harvest Fair	DVAC/Public Health Tables to promote prevention work

Summary overview for the month:

The Public Health Nurses have been conducting flu clinics throughout the month of October and administering flu immunizations to residents. Helping residents with Fuel Assistance applications. Working on emergency dispensing sites and conducting walk throughs. They have coordinated with Emergency management on shelter supplies and presentations about the MRC. Actively working on MRC new/renewal applications and recruitment.





NEEDHAM PUBLIC HEALTH DIVISION



COMMUNICABLE DISEASES:	JUL	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	Apr	MAY	JUN	T20	T19
Amebiasis	0	1											1	0
Chickungunya	1												1	0
BABESIOSIS	1	1											2	4
Borrelia Miyamota													0	0
CAMPYLOBACTER	2	2	2	2									8	6
CRYPTOSPORIDIUM													0	0
Cyclosporiasis	4	1											5	0
EHRlichiosis/ HGA	2												2	4
Enterovirus		1											1	0
GIARDIASIS	1	1	1										3	2
Haemophilus Influenza													0	0
HEPATITIS B													0	9
HEPATITIS C		1	2										3	11
Influenza													0	98
Invasive Bacterial Infection		1											1	0
Legionellosis	1												1	0
Listeriosis													0	0
LYME	7	13	2	3									25	46
MEASLES													0	0
MENINGITIS													0	0
Meningitis(Aseptic)													0	0
Mumps	1												1	1
Noro Virus													0	5
PERTUSSIS	1	1											2	3
RMSF(Rocky Mt Spotted Fever)													0	0
SALMONELLA													0	3
SHIGA TOXIN													0	1
SHIGELLOSIS													0	3
STREP Group B		1											1	0
STREP (GAS)													0	2
STREP PNEUMONIAE													0	3
TUBERCULOSIS													0	0
TULAREMIA													0	0
Latent TB													0	1
Varicella	1	1											2	6
Vibrio													0	1
West Nile virus													0	0
Zika													0	0
TOTAL DISEASES	22	25	7	5	0	0	0	0	0	0	0	0	59	209
Revoked/Suspect Diseases Investigated		2		2									4	5
Contact Investigation													0	5



NEEDHAM PUBLIC HEALTH DIVISION



ANIMAL TO HUMAN BITES	JUL	AUG	SEP T	OCT	NOV	DEC	JAN	FEB	MAR	Apr	MAY	JUN	T20	T19
DOG	1	1	1	0									3	23
CAT		1											1	0
BAT		1											1	0
SKUNK													0	1
RACCOON													0	0
other													0	0
TOTAL BITES	1	3	1	0	0	0	0	0	0	0	0	0	5	24
IMMUNIZATIONS	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	FY20	FY19
B12	2	2	2	2									8	24
Flu (Seasonal)				525									525	712
Hep B													0	2
Polio													0	4
TDap			10										10	6
Varicella													0	0
Consult													0	702
Fire/Police	4	8	5	10									27	157
Schools	2	7	11	7									27	172
Town Agencies	2	2	3	8									15	267
Community Agencies	1	2	8	5									16	103
ASSISTANCE PROGRAMS	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	FY20	FY19
Food Pantry	2	2	0	2									6	14
Food Stamps		0	0	0									0	1
Friends		0	0	0									6	0
Gift of Warmth		2	0	1									1 (\$627)	20(\$5817)
Good Neighbor		0	0	0									0	2
Park & Rec	1	0	0	1									2	2
Salvation Army		0	0	0									0	1
Self Help	1	1	1	5									8	26
Gift Cards Distributed: 0														



NEEDHAM PUBLIC HEALTH DIVISION



Unit: **October monthly report for 2019**

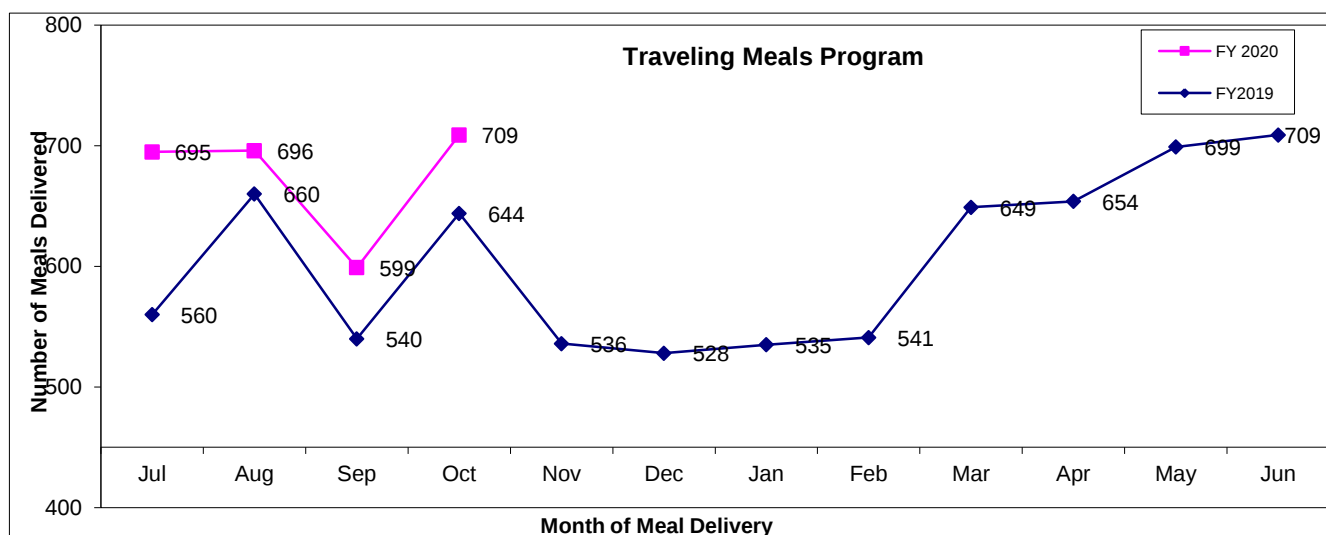
Staff member: **Maryanne Dinell, Program Coordinator**

Activities and Accomplishments

Activity	Notes
14 volunteers packed meals and 26 volunteers delivered 709 meals to homebound Needham residents in need of food for the month of September	There were no incidents that required 911. All clients seemed content with their meals, for there were no complaints. A few clients called looking for their meals, Because drivers were late due to clients slow to answer their door.
5 clients enrolled and 1 client no longer need the Program.	Dementia, Anxiety, depression and declining health justified their need for the Program. 1 client able to provide on their own.

Other Public Health Division activities this month:

Summary overview for the month: **October, 2019**





Needham Public Health Division October 2019



Assist. Health Dir. - Tara Gurge
Health Agents - Diana Acosta and Monica Pancare
Food Regulatory Program Analyst/Intern - Michelle Iovino

Unit: Environmental Health

Date: 11/8/2019

Staff members: Tara Gurge, Diana Acosta, Michelle Iovino and Monica Pancare

Activities and Accomplishments

Activity	Notes
Alcohol Compliance	Diana accompanied Lt. John McGrath, Officer Adrienne Anderson, and two volunteers from Olin College on the alcohol compliance check. Procedures are similar to the tobacco compliance check. The two volunteers were split up and paired off with an officer.
Bodyworks spot check with the State Inspector	Diana was accompanied by Mike Schlittler from Needham Police Department and Brian Cullen, Investigator from the state Massage Licensing Board. We checked Season Day Spa, and 360 Degrees of Fitness and Wellness. We attempted to check Blue Lotus, Ary's Massage, and 3 residential massage practices. The non-residential practices were in session with clients and one of the residential practices was in process of completing paperwork from the State. No tickets were issued or suspicious activity was seen.
2020 Permits renewal packets sent out	All renewal applications for Acupuncture, Biotech, Bodyworks Establishments, Bodyworks Practitioners, Disposal of Sharps, Food, Hotels, Indoor pools, Medical Waste Haulers, Septage/Grease Haulers and Tobacco Establishments were sent out on October 10 th , 11 th and 15 th .
Artificial Turf PFAS Testing	In process of working with Fuss & O'Neill in setting up meeting to discuss what will be required in order to conduct additional turf testing for PSAS.
Pest Control	In process of meeting with Water and Sewer, Town Manager and Building Maintenance Depts. to determine future pest control needs for the Town. Still researching the development of an Emergency Pest Control BOH ordinance. (On-going.)

Other Public Health Division activities this month: (See attached report.)

Activities

Activity	Notes
Bodyworks (New)	<u>Baan Thai Spa</u> – Owner still in process of building out space. Not ready to open. 1 – Annual Bodywork Establishment Inspection completed (for permit renewal.) - Season Day Spa
Bodyworks / Massage establishment spot check inspections	9– <u>Bodywork spot check inspections conducted at:</u> - Season Day Spa - 360 Degrees of Fitness and Wellness - Blue Lotus - Ary's Massage - Healing Hands - Boston Rolfer - 3 residential massage practices
Demo Reviews/ Approvals	12- Demolition sign-offs: • 260 Hunnewell Street • 43 Kenney Street • 76 Bess Road • 31 Gayland Road • 75 Forest Street • 22 Park Ave. • 30 Park Ave. • 22 Hemlock Road • 108 Newell Ave. • 37 John Street • 140 Meadowbrook Road • 209 West Street
Farmer's Market	37 – Farmers Market inspections conducted
Food – Temporary Food Event Permits	8 – Temporary Food Permits issued
Food – Conducted Annual Harvest Fair inspections which occurred on Sunday, Oct. 6 th . (Combined Harvest Fair and Farmers Market.)	12- Harvest Fair inspections conducted at all participating food vendors (along with Farmers Market food vendors): - Abbott's Frozen Custard - Adelaide Newton - Cappella - Dugu, Inc. - Frosty Flyer - Gari - Hearth Pizzeria - Norfolk Lodge - Nothing Bundt Cakes - Operation Smile - Stacy's Juice Bar - William Raveis
Food – Food Permit Plan Reviews (Updates)/Permits Issued	1 – Food Establishment looking to start their Pre-operation inspection process: - <u>Thai Story Restaurant (formerly known as Eat Well)</u> –UPDATE – Plan review completed. Comments sent back to owner. He is waiting for Planning Board decision on dumpster enclosure expansion proposal (Still in process.) 1 – Food establishment seasonal/annual permits issued: - Pancho's Taqueria 1 – Food Establishment pending plan review submittal:

	- Home Kitchen Inc.
Food – 6-Month Check-ins	7 – 6-month check in with Level 1 Food Establishments - Only required to be physically inspected once a year. Check in requires an update on food operations and new manager name(s).
Food Pre-operation Inspections conducted	2 – Pre-operation inspections conducted for: - Pancho's (2x)
Food - Mobile	0– Mobile Truck Inspections conducted.
Food Complaints	4/5 – Food Complaints/Follow-ups: - <u>Hungry Coyote (x2)</u>– Resident called to report seeing children in the kitchen area and behind the counter. Also observed the main chef drinking while cooking. Diana followed up with both co-owners. Manager was reminded that his children cannot be behind the counter. Still waiting on receiving additional ServSafe food training certifications for staff, which will be a strict condition in order to renew his 2020 food permit. Also needed to require the increase in trash pick-up schedule due to on-going complaints from abutting establishments about frequent trash overflows. Site visit conducted to ensure proper trash containment. - <u>Amir's Natural Foods</u> – Resident attended farmer's market/Harvest Fair and reported observing stand owner touching ready to eat items with bare hands. Tara followed up with resident. - <u>Dunkin Donuts Highland Ave.</u> – Resident reported he requested a manager and was told there was no manager on site. The resident reported that a female employee working behind the counter who prepared the hot chocolate that was ordered dropped the whipped cream can onto the floor. It did not have a cap and the customer requested a new can to be used. The employee did this, but the resident is complaining that the old can was not thrown away. - <u>Dunkin Donuts Highland (cont.)</u> - The resident also reported that an employee was sweeping while he was consuming food in the establishment. Owner of location was alerted of the complaint and would address these issues during the staff meeting. - <u>Dunkin Donut Chestnut St.</u> – Customer reported seeing a group of middle school aged girls come into the location and go into the kitchen area to make their own meals. This has been reported to all the owners and managers of the establishment. Owner is in process of re-training managers about this food code violation, and will also be looking into repairing his security cameras that were not in service.
Food –Additional Follow-ups	2 – Additional Follow ups conducted at Cookies By Design - - A freezer unit at this location has been frosted over for an extended period. The fans were no longer functional, and the unit was not able to maintain a temperature of 41°F or below. Owner had servicer come out for repairs which led to the fridge being completely out of commission for a week. The establishment had to use premade cookie dough and could not store anything overnight. With the repair company not sending a technician over, a refurbished refrigerator unit was ordered to be brought on site ASAP, or we were going to close establishment. Diana conducted a site visit the following AM and was able to verify that the replacement unit was in proper working order and at the proper cold holding temperature. Awaiting a full-time manager to become ServSafe certified, which will be a strict condition for the issuance of their 2020 food permit. (Still pending.)
FDA Grants	<u>Updates on FDA Grant Application Submissions –</u> - Michelle Iovino, intern, prepared the Public Health Division for an audit of Standards 1, 3, 5, and 9. The audits were completed with Health Director in Wakefield on Oct. 25th. Will work on preparing for additional standard audits in the coming months. 2020 Grant Applications Submitted:

	- Category 2 – Moderate Project – Focusing on researching a grading system and other food-related projects. Total Money Requested: \$15,212.25 - Category 3 – For travel costs to attend FDA conferences and trainings. Total Money Requested: \$3,000.00 (max. amount)
Housing Complaints /Follow-ups -	2/7 – Housing Complaints/Follow-ups - - <u>Yurick Road (0/1)</u> - Cabinet in home is full of insulation and there is a closet in the home that has piping that run hot water. The foam around the piping has melted and the renter is concerned that her and her family are being exposed to something. Diana called back and left a message to provide information on potentially getting an asbestos inspector out to the property to check on these items. UPDATE: The resident was provided with asbestos inspector list from the state. - <u>Ferndale Road (0/1)</u> – Diana and Dave Roche, Building Commissioner, met with homeowner on site. Conducted a walk through. Issues were related to open permits with the Building Department. There were no issues with Health. - <u>Central Ave (1/2)</u> – Occupant of unit reported issue with the oven. The occupants stated that the stove was not working. Possible that the stove has an electric starter that is not working. The heat is not able to be controlled inside the apartment. There was a lack of communication from the landlord. The landlord has been in contact with Diana and the occupant. The occupant is updating the Public Health Division on any changes or lack thereof. No inspection has been officially requested to date. - <u>Briarwood (1/1)</u> – Resident reported an exhaust fan in a specific bathroom of the facility was not working and there are no windows in the bathroom. Diana called Briarwood to report the complaint. The maintenance staff reported the exhaust fan became unplugged and was now re-plugged in and functioning. - <u>Olin College (Curtis Road) (0/1)</u> – Former office owned by Olin College was re-inspected by Diana. The initial walk through was on July 27, 2018 and the first order letter was issued on July 31, 2018. All items have been addressed and the building is safe for habitation. The college is not planning on using this building for offices but is looking to it rent out for living space. - <u>Marked Tree Rd. (0/1)</u> – Resident issued a complaint about bed bugs in their group home. Worked with residential director and house manager in ensuring that they were following their Bed Bug protocols. Received copies of on-going pest reports. UPDATE: Met with pest control technician and house manager on site and conducted walk through inspection. One area on site in a leather reclining chair located in the living room was noted as being active. No activity was observed in any of the bedrooms on site. Plan was to properly treat the chair and wait for treatment to be successful, and then have chair sufficiently wrapped (and marked appropriately so it cannot be re-used) and removed off-site.
Nuisance – Complaints/ Follow-ups	3/5 – Nuisance Complaints/Follow-ups conducted for: - <u>Needham Center Laundromat</u> – A resident reported that the facility was not clean, various machines are out of order, chairs and windows were cracked, and water damaged magazines were stuffed between machines to prevent them from knocking each other. Diana walked in to check on conditions the same day. There were 7 washing machines and 4 dryers out of service. There was a build up of dust in between machines. Awaiting response from owner of establishment. - <u>St. Mary Street: UPDATE</u> – At a recent check, it seems that resident is removing less items that he was previously. Diana has alerted the fire department of the lack of progress and concern as it is a potential fire hazard. (In process.) - <u>Pickering St.(x2)</u> - Resident of Stephen Palmer Apartments reported a constant loud noise emanating from the rooftop cooling towers at the Verizon Building across the street. Tara and Diana met with the resident and two representatives from Verizon. Took sound readings to determine if it was a nuisance. Results of 2 days of testing showed that the noise was not in violation of the MassDEP nuisance noise ordinance of 10 or more decibels above background noise. - <u>Second Ave. (Brigham Health Building)</u> – Concern from staff about people on site smoking right outside back door patio area and smoke is reportedly migrating back into the building. Spoke to Building Management about complaint. Sent them copy of BOH Tobacco

	regulation, along with signage that they can post on site.
Septic – Installation Inspections	2– Septic installation/Tank check inspections conducted at: - #1407 Central Ave. (New Storage Bldg. at RTS) - Tank installed. UPDATE – Follow-up tank alarm check inspection conducted. Final as-built plan submission pending for our review/approval. - Claxton Field – Met Engineering on site to open existing septic tank. Tank was full and needed to be pumped. Tank was serviced and will be put on a routine service schedule.
Septic – Enforceable Agreement Discussion (Cont.)	1 - Enforceable Agreement Discussion held for #57 Walker Lane. (Continue discussion from last BOH meeting.) Spoke with Town Engineer. They will set up a meeting with Jones Contracting and will determine an estimate to bring sewer up the street to allow the owner to tie in. They will provide estimate to BOH once determined. UPDATE – Tony, the Town Engineer, met with Jones contracting. Estimate received. (See enclosed.) Discuss.
Subdivision – Rockwood Lane Off-street Drainage Bond Release Request	1 – Subdivision off-street drainage bond release request received from Planning Board: - Rockwood Lane Subdivision: Issued Memo to Planning Board with proper procedures that Builder will need to follow in order for us to release off-street drainage bonds for Lots 1-9. (In process.)
Planning Board Plan Review/Site Visit	2 – Plan review/site visit conducted for Planning Board - - #946 Great Plain Ave. (Thai Restaurant) - Sent additional updated comments to Planning Dept. re: the new restaurant plan. UPDATE: Conducted site inspection with Town Engineer and Building Commissioner to determine dumpster enclosure expansion with the Planning Board. (On-going – Approval pending.)
Wells	1 – Well inquiry received from Scout group on whether the Health Division would allow the installation of a hand pump well in the Town Forest in order to be used for putting out camp fires, etc. Spoke with Mass DEP on hand pump well requirements. Provided information to Scout organization. (Still in process, and will waiting to hear back if wanting to go forward with the permit application procedures.)

Yearly

[illegible]

FY 20 Priority FBI Risk Violations Chart (By Date)

Restaurant	Insp. Date	Priority Violation	Description
Hearth Pizzeria	7/13/2019	3-302.11 (A)(2) Raw Animal Foods Separated from each other - Except when combined as ingredients, separating types of raw animal foods from each other such as beef, fish, lamb, pork and poultry during storage, preparation, holding, and display by: (a) Using separate equipment for each type, or (b) Arranging each type of food in equipment so that cross contamination of one type with another is prevented and (c) preparing each type of food at different times or in separate areas.	A cooked turkey breast was stored in Same container as raw chub beef. PIC removed and stored properly
Briarwood Healthcare Center	7/13/2019	4-501.114 (A)-(E) Chem.San. Temp./pH/Concentr./Hard.- A chemical sanitizer used in a sanitizing solution shall be used in accordance with the EPA-registered label use instructions. A chlorine solution shall have a temperature of 55°F-120°F, depending on water hardness, and concentration range of 25ppm to 100ppm. An iodine solution shall have a minimum temperature of 68°F with a concentration range of 12.5ppm to 25ppm. A quaternary ammonium compound solution shall have a minimum temperature of 75°F and be used according to the manufacturer's use directions.	Sanitizer in the 3 compartment sink was not at 200 ppm. Test Frequently and at least once every four hours
Gari Japanese Fusion	7/27/2019	3-501.19 (B)(1)(3)(4) Time as a Public Health Control - 4 Hours - If time rather than temperature is used as the public health control up to a maximum of 4 hours: the food shall have an initial temperature of 41°F or less when removed from cold holding temperature control, or 135°F or greater when removed from hot holding temperature control; the food shall be cooked and served, served at any temperature if RTE, or discarded, within 4 hours from the point in time when the food is removed from temperature control; and the food in unmarked containers or packages, or marked to exceed a 4-hour limit shall be discarded.	Time as a public health control as required no charts were available as required. Cooked product did not have time stamp and other information as required. The most recent date was July 14 2019 it was observed that shrimp and other TCS foods were held at room temperature products were discarded
The Farmhouse	7/27/2019	3-501.14 (A) Cooling Cooked Foods - Cooling cooked TCS foods shall be done within 2 hours from 135°F to 70°F and then within 4 hours from 70°F to 41°F.	Corrected on site - Stockpot of beef stock cooling improperly 2 large containers of chicken stock cooling improperly. Repeat offense. Train staff on proper cooling techniques to get product to 70f within 2 hours and below 41f within the next 4 hours.
Fuji Steakhouse	8/9/2019	3-304.11 Food Contact with Soiled Items - Food shall only contact surfaces of: equipment and utensils that are cleaned and sanitized; single-service and single-use articles; or linens, such as cloth napkins that are used to line a container for the service of foods AND are replaced each time the container is refilled for a new consumer.	Side towel used to store cut vegetables in rolltop on service line. Paper towel used layering products.

Fuji Steakhouse (cont.)	8/9/2019	3-302.11 (A)(2) Raw Animal Foods Separated from each other - Except when combined as ingredients, separating types of raw animal foods from each other such as beef, fish, lamb, pork and poultry during storage, preparation, holding, and display by: (a) Using separate equipment for each type, or (b) Arranging each type of food in equipment so that cross contamination of one type with another is prevented and (c) preparing each type of food at different times or in separate areas.. 3-501.14 (D) Cooling When Receiving Raw Eggs - Raw eggs shall be received as specified under 3-202.11(C) and immediately placed in refrigerated equipment that maintains an ambient air temperature of 41°F or less.	Raw cut beef was stored on top shelves in walk-in above RTE Raw shell eggs 84F stored at room temp in kitchen. Discarded.
Beth Israel Deaconess Hospital Kitchen	8/10/2019	2-301.14 When to Wash - Employees shall clean their hands and exposed portions of their arms immediately before engaging in food preparation including handling utensils and equipment and: after touching bare human body parts other than clean hands and clean, exposed portions of arms; after using the toilet; after handling animals; after coughing, sneezing, using a tissue, using tobacco, eating, or drinking; after handling soiled equipment or utensils; after any type of contamination; when switching between working with raw food and working with RTE food; and before donning gloves to initiate a task that involves working with food.	During inspection two cooks present did not wash hands. Frequent handwashing is critical in between change of tasks. This inspector directed the chef to provide paper towels in the empty dispenser.
Brother's Pizza	8/15/2019	3-501.16 (A)(2) (B) Proper Cold Holding Temps. - All cold TCS foods shall be held at 41°F or below. Eggs that have not been treated to destroy all viable <i>Salmonellae</i> shall be stored in refrigerated equipment that maintains an ambient air temperature of 45°F or less.	Deli prep unit was on the warmer side. Tuna salad in top well was at 46°F. To be discarded at end of service. Will keep top lid shut as often as possible. Adjust all front of house cooling units to be cooler.
Hungry Coyote	8/22/2019	3-501.16 (A)(2) (B) Proper Cold Holding Temps. - All cold TCS foods shall be held at 41°F or below. Eggs that have not been treated to destroy all viable <i>Salmonellae</i> shall be stored in refrigerated equipment that maintains an ambient air temperature of 45°F or less.	Front of House - Front holding burrito units need to be cooler. Both units were in the mid 40's. Kitchen - Pork was cooked last night. Did not cool down properly. Temperature at 76°F. Discarded by PIC.
Founder's Café / Shark Ninja	8/22/2019	3-501.16 (A)(2) (B) Proper Cold Holding Temps. - All cold TCS foods shall be held at 41°F or below. Eggs that have not been treated to destroy all viable <i>Salmonellae</i> shall be stored in refrigerated equipment that maintains an ambient air temperature of 45°F or less.	Deli prep unit and the salad bar in the front was running warm. Tuna salad observed at 45°F. See other temps in log. Manager to get facilities to adjust temperature of units. Staff instructed to set up deli area later the day right before start of service.
Dragon Chef	8/22/2019	3-501.16 (A)(2) (B) Proper Cold Holding Temps. -All cold TCS foods shall be held at 41°F or below. Eggs that have not been treated to destroy all viable <i>Salmonellae</i> shall be stored in refrigerated equipment that maintains an ambient air temperature of 45°F or less.	Cooked chicken in cold holding unit had a prep date of 8/15. Checked temperature of center of bowl and was at 60°F. Manager instructed to dispose of food. Disposed of compromised item. Directed PIC to lower temperature of walk-in.

New Garden	8/24/2019	2-301.14 When to Wash - <i>Employees shall clean their hands and exposed portions of their arms immediately before engaging in food preparation including handling utensils and equipment and: after touching bare human body parts other than clean hands and clean, exposed portions of arms; after using the toilet; after handling animals; after coughing, sneezing, using a tissue, using tobacco, eating, or drinking; after handling soiled equipment or utensils; after any type of contamination; when switching between working with raw food and working with RTE food; and before donning gloves to initiate a task that involves working with food.</i> 3-304.11 Food Contact with Soiled Items - <i>Food shall only contact surfaces of: equipment and utensils that are cleaned and sanitized; single-service and single-use articles; or linens, such as cloth napkins that are used to line a container for the service of foods AND are replaced each time the container is refilled for a new consumer.</i> 3-302.11 (A)(2) Raw Animal Foods Separated from each other - <i>Except when combined as ingredients, separating types of raw animal foods from each other such as beef, fish, lamb, pork and poultry during storage, preparation, holding, and display by: (a) Using separate equipment for each type, or (b) Arranging each type of food in equipment so that cross contamination of one type with another is prevented and (c) preparing each type of food at different times or in separate areas.</i> 4-702.11 Frequency-Before Use After Cleaning - <i>Code: Utensils and food contact surfaces of equipment shall be sanitized before use and after cleaning.</i>	During the inspection many of the staff members went outside in parking lot to take a break. Some were observed eating/drinking, touching arms and face. Upon entering the kitchen from taking their break several staff members did not wash hands as required. This inspector required and observed each staff member to wash their hands again, as required. Ice machine underside has slime on rim. PIC directed to clean ASAP. Knives stored improperly on prep line. Do not store directly on soiled equipment prep top area. Improper storage of raw TCS foods in walk-in. Food uncovered. It was observed that a cook was "washing" a pail and beverage container in the middle of the 3-comp. sink without proper washing or sanitizing. The sinks were not set up yet or ready for ware washing tasks.
Residences at Wingate	9/7/2019	3-801.11 (C) Special Requirements (Raw/Partially Cooked RTE) - <i>Code: The following foods may not be served or offered for sale in a RTE form: raw animal foods such as raw fish, raw marinated fish, raw molluscan shellfish, and steak tartare, a partially cooked animal food such as lightly cooked fish, rare meat, soft-cooked eggs that are made from raw eggs, and meringue; and raw seed sprouts.</i>	Poached eggs and fried eggs were prepared from raw shell eggs unpasteurized. Poached egg was 135f Fried egg 145f HSP raw and partially under cooked foods may not be offered in this HSP environment. Use pasteurized shell eggs for this offering
Three Squares	9/14/2019	3-301.11 (B) Preventing Contamination from Hands - <i>Code: Except when washing fruits and vegetables, food employees may not contact exposed, ready-to-eat food with their bare hands and shall use suitable utensils such as deli tissue, spatulas, tongs, single-use gloves or dispensing equipment.</i>	Cook prepared toasted cheese bacon sandwich and removed it to cutting board. Touched product without wearing gloves. Product discarded. Cook stated that he never heard of the regulation that requires you to wear gloves when touching ready to eat foods.

Three Squares	9/14/2019	3-304.11 Food Contact with Soiled Items - <i>Code: Food shall only contact surfaces of: equipment and utensils that are cleaned and sanitized; single-service and single-use articles; or linens, such as cloth napkins that are used to line a container for the service of foods AND are replaced each time the container is refilled for a new consumer.</i>	Ice machine inside surface has reddish slime Clean and sanitize
Dunkin Donuts Highland	9/12/2019	3-501.16 (A)(2) (B) Proper Cold Holding Temps. <i>Code: All cold TCS foods shall be held at 41°F or below. Eggs that have not been treated to destroy all viable Salmonellae shall be stored in refrigerated equipment that maintains an ambient air temperature of 45°F or less.</i>	Bacon at 66°F and employee stated it was take out of the walk in 5-10 mins before. Items all discarded.
Cookies By Design	9/16/2019	3-301.11 (B) Preventing Contamination from Hands - <i>Code: Except when washing fruits and vegetables, food employees may not contact exposed, ready-to-eat food with their bare hands and shall use suitable utensils such as deli tissue, spatulas, tongs, single-use gloves or dispensing equipment.</i> 3-501.16 (A)(2) (B) Proper Cold Holding Temps. <i>- Code: All cold TCS foods shall be held at 41°F or below. Eggs that have not been treated to destroy all viable Salmonellae shall be stored in refrigerated equipment that maintains an ambient air temperature of 45°F or less.</i> 7-201.11 Storage Separation <i>Code: Poisonous or toxic materials shall be stored so they cannot contaminate food, equipment, utensils, linens, and single-service and single use articles.</i>	Staff decorating cookies without any gloves. Staff did not immediately know where gloves are located. Found the box of gloves and staff member who was decorated added gloves. Need to have adequate supply of gloves. Cookie dough in refrigerated unit is at 47°F. Peanut butter cookie dough at 51.2°F Floor cleaner stored right next to spatulas. Was moved
Fresco	9/28/2019	3-501.16 (A)(2) (B) Proper Cold Holding Temps. <i>Code: All cold TCS foods shall be held at 41°F or below. Eggs that have not been treated to destroy all viable Salmonellae shall be stored in refrigerated equipment that maintains an ambient air temperature of 45°F or less.</i>	Corn beef hash held at room temp under grill line 76 F product discarded.
Cookies By Design	10/1/2019	3-501.16 (A)(2) (B) Proper Cold Holding Temps. <i>Code: All cold TCS foods shall be held at 41°F or below. Eggs that have not been treated to destroy all viable Salmonellae shall be stored in refrigerated equipment that maintains an ambient air temperature of 45°F or less.</i> 3-501.16 (A)(2) (B) Proper Cold Holding Temps. <i>Code: All cold TCS foods shall be held at 41°F or below. Eggs that have not been treated to destroy all viable Salmonellae shall be stored in refrigerated equipment that maintains an ambient air temperature of 45°F or less.</i>	Peanut butter cookie dough seen at 52°F. Snickerdoodle cookie dough was at 51°F. All doughs were discarded. Reg. Sugar batch made 10/1 seen at 57°. Stuck thermometer in different parts of the dough and the lowest seen was 55°.

The James	10/12/2019	3-501.14 (A) Cooling Cooked Foods- Code: Cooling cooked TCS foods shall be done within 2 hours from 135°F to 70°F and then within 4 hours from 70°F to 41°F.	Ale sauce in walk-in cooling improperly >70F Corrected on site
The Rice Barn	10/12/2019	3-302.11 (A)(1) Raw Animal Foods Separated from RTE - Code: Food shall be protected from cross-contamination by: (1) Separating raw animal foods during storage preparation, holding and display from: (a) Raw RTE food including other raw animal food such as fish for sushi or molluscan shellfish or other raw RTE food such as fruits and vegetables, and (b) cooked RTE food. 7-201.11 Storage Separation - Code: Poisonous or toxic materials shall be stored so they cannot contaminate food, equipment, utensils, linens, and single-service and single use articles. 7-201.11 Storage Separation - Code: Poisonous or toxic materials shall be stored so they cannot contaminate food, equipment, utensils, linens, and single-service and single use articles.	Cooked sliced chicken stored below raw ground chicken and raw salmon filets Paint stored above food refrigerator near back door along with soiled cleaning gloves. Mice rodent traps also stored on top of refrigerator Store segregated away from all food and equipment Draino stored above sink in basement Store away from food equipment
The Farmhouse	10/26/2019	3-501.14 (A) Cooling Cooked Foods - Code: Cooling cooked TCS foods shall be done within 2 hours from 135°F to 70°F and then within 4 hours from 70°F to 41°F. 7-201.11 Storage Separation - Code: Poisonous or toxic materials shall be stored so they cannot contaminate food, equipment, utensils, linens, and single-service and single use articles. 4-702.11 Frequency-Before Use After Cleaning - Code: Utensils and food contact surfaces of equipment shall be sanitized before use and after cleaning.	Prepared sauce cooling improperly on counter. Temp 138F Toxic chemicals stored above vegetable prep sink while employee was washing/ prepping product. Store segregated French fry potato cutter permanently mounted in dry room area, has significant debris and buildup of soil. Must be washed and sanitized before use and after cleaning. Equipment was removed from the wall, and staff is to mount or place it in a location where it can be easily washed rinsed and sanitized property
Masala Art	10/26/2019	3-501.14 (A) Cooling Cooked Foods - Code: Cooling cooked TCS foods shall be done within 2 hours from 135°F to 70°F and then within 4 hours from 70°F to 41°F 3-501.15 (A) Cooling Methods - Code: Cooling shall be accomplished in accordance with the time and temperature criteria specified under 3 501-14 by using one or more of the following: placing food in shallow pans; separating the food into smaller or thinner portions; using rapid cooling equipment; stirring the food in a container placed in an ice water bath; using containers that facilitate heat transfer; adding ice or other effective methods.	Improper cooling of TCS foods Large Milk rice mix on countertop cooling Products brought to blast chiller. A large pan of cooked goat was stored in the refrigerator @179F product was removed and brought to the basement blast chiller



NEEDHAM PUBLIC HEALTH DIVISION



Unit: Substance Use Prevention

Date: October 2019

Staff: Karen Shannon, Karen Mullen, and Monica DeWinter

Activities and Accomplishments

Activity	Notes
Family Dinner Project planning	Planning for November 7 event; publicity, volunteer recruitment, logistics. Co-hosting with BIDNeedham.
Vaping Task Force	Received commitment from 7 community members for task force. First meeting planned anticipated early November.
SPAN Quarterly Meeting Action Team Meetings	• Quarterly meeting held 10/1/19, presentation of MWAHS 2018 and Parent Survey 2019 data. 29 in attendance • For Parent, Community, Youth and Steering Committee
Presentation to BOH	Karen presented data from MWAHS 2018 and Parent Survey 2019 at October BOH meeting.
Alcohol Training Toolkits Distribution	- o 31 updated toolkits hand delivered to Needham alcohol licensees - o Delivered to 6 off- premise and 25 on-premise establishments. - o Awaiting distribution to Pancho's Taqueria once they open
SPAN at Harvest Fair	Karen staffed SPAN table at Needham Harvest Fair, 10/6/19
DEA Drug Take Back Day	- o Semi-annual safe disposal of unwanted, unused and expired drugs - o Advertised in Needham Times, Needham Patch, and Facebook. - o Partnered with Needham Police Dept. - o Karen attended event with 3 SALSA student volunteers, 10/26/19, stationed outside Town Hall
Planned and Executed two NHS 5 th Quarter Events	- o 5th Quarter events are substance-free teen events held after home football games - o Held on 10/18 and 10/25/19 - o 300+ NHS students attended each event. - o Donations from community funded free pizza, snacks, basketball, ping pong, and dj/music.
Planned & Facilitated 4 SALSA Vaping Awareness Action Team Meetings (10/4, 10/11, 10/18, 10/25)	NHS SALSA Students working with NHS administration to educate parents, peers & community about the risks of vaping.



NEEDHAM PUBLIC HEALTH DIVISION



Planned & Executed 2 SALSA Field Trips to Pollard grade 8 Health Classes	- o Continuation of refusal skills training presented by NHS SALSA students - o 4 classes held over 10/3 and 10/4 - o Approximately 16 SALSA students presented to 100 Pollard students.
Facilitated SALSA "Talk About it" Initiative meetings	- o Coordinated final sign off for SALSA student-initiated "Talk About it" with NHS Guidance and Wellness administration. - o NHS students will be able to request online non-emergency help for self or peers.

Substance Use Prevention and Education ~ Initiative Highlights

Needham NPHD, Needham SPAN and Substance Abuse Prevention Collaborative (SAPC) grant* collaboration with the towns of Dedham, Needham, Norwood and Westwood.

SAPC grant

Town coalition meetings:

Dedham DCDA coalition: *No meeting scheduled*

Impact Norwood coalition: October 10th Norwood High School 3:00pm

Westwood Cares coalition: *No meeting scheduled*

Needham SPAN coalition: October 1st Rosemary Recreation Complex 8:30am

SAPC program, capacity building and strategy implementation preparation:

(1) TIPS *Training for Intervention Procedures* - all alcohol licensees (Section 12 & Section 15) Monday, November 4th American Legion, Dedham (9:30am-2:30pm | 3:00pm-8:00pm) Promote final registrations, email confirmations, request purchase orders, order training manuals and food
(2) SAPC program manager salary review (FY18 | FY19 | FY20) for FY20 budget amendment EIM system, Michelle Vaillancourt (3) SAPC Alcohol Policy team- toolkit content review- prevention colleague training structure for BSAS contract manager meeting. (4) Data analyst: prioritization of regional data, police incident, youth survey, EMS (Dedham- Needham only) AlcoholEdu high school reports, alcohol compliance check data and parent surveys (Norwood- Dedham and Needham) outreach to consultant.

SAPC Leadership Team: October 21st **Agenda:** (1) SAPC Youth Engagement Project Coordinator: Position posted October 17th Town of Needham website, Handshake October 18th students: BUSPH- Tufts- William James *review and share posting* (2) BSAS grant compliance: Programmatic (outcomes quarterly- Q1 due October 31st) and financial (monthly expense reimbursement- FY20 budget narrative submitted BSAS) (3) DPH-BSAS prevention funding, procurement update: Notice of Intent (NOI) for Prevention: *Overdoses to Action* opioid prevention focus, SAPC contracted grantees (4) Resource sharing: suicide and overdose loss- survivor grief support resources, Samaritans Safe Place meetings (Needham- Quincy- Framingham- Boston) www.samaritanshope.org Grief after overdose support group resources- GRASP- The Sun Will Rise (Braintree- Weymouth- Quincy) www.thesunwillrise.org (5) SAPC regional strategies current: **Alcohol Compliance Checks**, *fall checks completed*. Dedham (2 violations) Needham (1 violation) and Westwood (1 violation) Norwood (2 violations) **TIPS trainings:** 2 sessions Monday, November 4th 9:30am-2:30pm- 3:00pm-8:00pm Dedham American Legion. **SAPC certified TIPS trainers:** Officer Jason Sullivan, Dedham | Aubrey Ciol, Norwood Public Health | Carol Read. Session registrations as of October 31st (41 morning- 10 evening) (6) BSAS Statewide Substance Use Prevention Conference, December 10th *Constructing a Collective Vision for Prevention: The Connection Between Partnerships, Processes, and Results* Four Points Sheraton Norwood, 9:30 a.m.-3:30 p.m. BSAS Notification, Fernando Perfas: Positive Youth Development initiative with the Boys & Girls Clubs and YMCA Massachusetts, protocol details pending. **SAPC in process:** DMH Jail Diversion/Arrest grant, co-application Dedham Police Department- Program Manager final salary review, FY18- FY19- FY20 clarification Needham Town Accountant for FY20 EIM line item amendment.

Needham Police Department: October 9th Alcohol compliance checks, procedures and protocol review, Lt. John McGrath. Review SAPC grant regional alcohol compliance check protocol, Police-Public Health final and ABCC compliance check protocols to ensure operationalizing as SAPC regional effort. Request for support with operatives, referred to Curry College Criminal Justice and Westwood Police Explorer program (youth)

SAPC Alcohol policy team: October 12th Conference call Liz Parsons, Melrose SAPC, Colin Gallant, Hudson SAPC and Heather Warner, Planning meeting with BSAS prevention managers: Alcohol policy tool kit content review, options to share tool kit with prevention peers, protocols to support community alcohol policy introduction and training event logistics.

Behavioral Health Promotion and Prevention Commission* October 15th Conference Call. Team presentation debrief on September 23rd meeting. Liz Parsons, SAPC Program Manager, Melrose Public Health, Kat Allen, Franklin County, FROG. Next steps: MA SABG prevention allocation, federal mandate 20% minimum. Strategies for presentation asks: Commission hire prevention specialist and prevention task force appointments to support upstream prevention work. * *Formerly: Promote-Prevent Commission, HB 3898.*

Alcohol policy - BSAS: October 24th SAPC Alcohol Policy team: Liz Parsons, Melrose SAPC, Colin Gallant, Hudson SAPC and Heather Warner, Alcohol policy tool kit content review, options to share tool kit with prevention peers, protocols to support community alcohol policy introduction and training event logistics. Andy Robinson, Prevention Program Manager, BSAS and Amal Marks, SAPC Contract Manager. SAPC cluster review of current programs, initiatives and outcomes through 2019, general overview of NOI opioid prevention funding (CDC funding to Massachusetts)

BSAS Center for Strategic Prevention Support (CSPS): October 24th Newly awarded (five year) Technical Assistance contract. Needham SAPC Technical Assistance provider, Andrea El-Turkmani, MSW, LCSW, CPS. Review Needham SAPC Strategic Plan, current initiatives, successes and challenges, direction for TA support. TA requests, written and reviewed for approval by Gisela Rots, Director Center for Strategic Prevention Support (CSPS) and Andy Robinson, Prevention Program Manager and Fernando Perfas, Assistant Director of Prevention. BSAS.

TIPs practice session: October 28th SAPC TIPs Certified trainer four (4) hour practice session. Component review: video segments, course content, logistics for attendee registrations and administration of TIPs examination. Trainers: Jason Sullivan, Dedham Police Department- Aubrey Ciol, Norwood Public Health and Carol Read. Two sessions, 9:30am-2:30pm- 3:00pm-8:00pm. Monday, November 4th

AdCare- BSAS training: October 29th *Leveraging Evaluation Data to Assist with Sustaining Outcomes, Refining Needs, and Determining Future Direction*, Trainer: Scott Formica, Ph.D. Overview for prevention specialists: *leverage existing evaluation data and/or to collect new data to help inform your decisions about sustainability planning and to help position you to refine needs and resource assessments, improve capacity to leverage evaluation data to assist with sustainability planning and to refine needs and resource assessments. Primarily intended for individuals who have previous training using a public health planning model, such as the Strategic Prevention Framework; those with experience using a public health planning model in a community setting; and those with basic knowledge of evaluation, needs and resource assessment, and sustainability planning principles.*

Bentley University training: October 30th *Harnessing the Power of Inclusivity* Center for Women and Business* (CWB) Facilitators: Trish Foster, Assistant Program Manager, Overview diversity, inclusion and unconscious bias, skill building (awareness) tools to address cultural, gender and racial bias and equity discrepancies to build inclusiveness, collaboration and enhanced outcomes across project teams and departments. *Mission: Advancing women and fostering workplace diversity, equity and inclusion from the classroom to the boardroom.

Needham Public Health Division:

NPHD – SPAN initiatives:

NPHD programs meeting preparation outreach for research and resource gathering:

(1)NPHD monthly report October **(2)** Grief resource compilation: suicide loss survivors - overdose loss survivors **(3)** Recovery support resource review and compilation **(4)** DMH Jail Arrest/Diversion grant- Staffing structure review application **(5)** NPHD FY21 goals Rachel Cain, SAPC grant outcome data.

BIDN Hospital – Community Benefits: October 1st Alyssa Kence, Review Needham CCIT program structure, data considerations, core team resident support processes and community partner collaborations to support CCIT mission. Request for BIDN emergency admission data related to substance use, overdose, acute mental health conditions, domestic violence and elder resident acute incidents. Review resources for all age residents navigating SMI, chronic depression and support resources for suicide loss survivors.

Needham Public Health Division staff meeting: October 1st Timothy McDonald, Director Health & Human Services Department. Staff sharing: programs, projects, grants and schedules-initiative updates through 2019. Staff lunch, Catherine Delano, MPH- DFC grant manager new position.

Norfolk DA Prevention: October 2nd Michael Morrissey, District Attorney- Jennifer Rowe, Assistant DA Updates: Team Rival youth peer leadership conference Tuesday, November 26th Gillette Stadium 9:00am-1:00pm – Registration application review- Advocacy for a youth policy program, The 84 or Youth to Youth- Contact information Carly Caminiti HRIA sent to Jen Rowe for November conference. Pending trainings: Montana Institute Positive Community Norms, Tobacco Health Regulation, local level advocacy for policy change – Norwood BOH model

Norfolk County 2019 Peer Leadership Conference planning: October 2nd Jennifer Rowe, Assistant District Attorney, Steph Patton, Stoughton. Review and request for addition of youth policy\advocacy workshop for 2019 annual leadership conference, November 26th Gillette Stadium. Consideration of: The 84, (tobacco- vaping-cigarette MDPH- HRIA) Dover Youth to Youth (Youth Empowerment model: education, advocacy (legislative-policy) community awareness-media counter marketing- (all substances)

Needham capacity: October 7th Beth Pinals, Ph.D. *Own Your Piece* youth leadership program update. Review data options: youth crosstab data substance use /mental health. Request: resident support, family systems addiction.

Suffolk- MMA Moakley Center for Public Management program- October 4th, 11th and 18th Certificate in Local Government & Leadership Management. 25 sessions: Strategic Leadership | Budgeting & Financial Management | Human Resource Management | Administrative Strategies of Local Government: Seminar in Public Policy, Contemporary Challenges for Local Government & Collaborative Management. Littleton, Fridays, 9:00am-4:00pm. **End: Strategic Leadership**

Community Crisis Intervention Team (CCIT): October 9th Collaboration to support residents navigating acute and chronic substance use disorders and/or mental health conditions. Presentations: Maureen Lavelle, LICSW Director of Social Work, NWH and Caitlyn Watt, Supervisor, Riverside Emergency Services review community/home-based expansion for SUD – MH evaluation to circumvent ED admission evaluation. **Core Team:** Lt. Chris Baker, Lt. John McGrath, Officer Carl Harmon, Needham Police Department, Tiffany Zike, RN, MPH, Donald Anastasi, Deputy Fire Chief, Ed Sullivan, EMS Supervisor, Kristen Lindley, LICSW and Kerrie Cusack, LICSW Senior Services, Sara Shine, Director, Needham Youth & Family Services, Catherine Delano, MPH, NPHD and Evan Marcus, Riverside Mobile Crisis Supervisor.

NPHD financial planning meeting: October 15th Dawn Stiller Review of SAPC FY20 spending by UFR code, Pending final Program Manager salary review for EIM submission. BSAS Contract Manager approved.

Needham Public Health- DMH grant Jail Arrest/Diversion grant: October 15th Strategic planning meeting, regional application structure- Dedham and Needham. Chief John Schlittler, Lt. Chris Baker, Needham, Chief Michael D'Entremont, Dedham, Timothy McDonald and Jessica Goldberg, consultant. Review application options and DMH funding parameters; benefit package funding allocation, narrative components, letters of support FY20 funding time frame feedback from Karin Orr, LICSW, NE Area Forensic Director, DMH, CIT model. *draft hold.*

DMH Jail Arrest/Diversion grant: October 15th & 21st Conference calls Karin Orr, LICSW, NE Area Forensic Director Review application options and DMH funding parameters; benefit package funding and potential collaboration with a neighboring town. FY20 funding time frame and narrative from, CIT model. *Initial draft- on hold.*

Riverside Trauma Center: October 16th Conference call, Jim McCauley, Assistant Director. Review of Riverside trauma response programs, resources and grief therapists for survivors of loved ones lost to suicide. Request for referral for Needham/Newton/Wellesley grief therapists

DMH Jail Arrest/Diversion grant: October 21st Strategic planning meeting for revised narrative Co-application with the Town of Dedham, police department. Jessica Goldberg, MPH, consultant.

NWH Hospital-Community Agency meeting: October 30th Facilitator: Lauren Lele, MPA, Director Community Benefits. Public Health Departments, Social services agencies from primary service area: Natick, Newton, Needham, Waltham, Wellesley, Weston. **Agenda:** Jodi Larson, MD, Chief Quality & Experience Officer, updates, Resignation, Dr. Jaffe. Community Based Measures Dashboard, Danielle Andrade, Population Health Business Manager, Newton-Wellesley Physician Hospital Organization. Current Hospital Landscape Current Hospital Landscape from a Social Work Perspective: Trends/Volume/Processes Maureen Lavelle, Director of Social Work, Department of Psychiatry. Community Mobile Health overview: van staffing, scope of services, protocols, timeline.

Resident Support: Respond to calls and/or meeting requests related to mental health conditions and/or substance use disorder. Referral to Riverside Emergency Services 24/7 support and counseling, assessment, treatment and recovery resources.

Needham stakeholder requests, survivor supports: F-65 yrs. Grief support resources- overdose
F-58 yrs. Grief support resources- suicide

M- 40yrs. SUD – MH Family support, addictions and intervention
Town holiday (1) October 14th Columbus Day Vacation day (1) October 23rd



NEEDHAM PUBLIC HEALTH DIVISION



Date: October 2019

Staff: Rachael Cain

Activities and Accomplishments

Safety at Home Program

Activity	Notes
Program Completion and Sustainability	• Work specified under the MetroWest Health Foundation grant is complete as of June 30, 2019, with all funds spent and deliverables met • Home visits and education will continue on a slightly more limited basis while they are integrated into the services offered by Aging Services' Social Workers and the Public Health Nurses • Fall prevention lunch and learn held for Fall Prevention Awareness Day on September 23rd

Housing Authority Assessment

Activity	Notes
Report Writing and Dissemination	• Final report is in the final round of edits • Graphic designer began work on final product • Began planning launch event and new programming at the Housing Authority

Accreditation Support

Activity	Notes
Community Health Assessment	• Beth Israel Deaconess Hospital-Needham completed the community health needs assessment and community health improvement plan and shared it with the Public Health Division. The document will be used to inform the Division's accreditation efforts.



NEEDHAM PUBLIC HEALTH DIVISION



Climate Change Project

Awarded \$26,089 grant from the Metropolitan Area Planning Council (MAPC) to implement a one-year climate resiliency project for older adults. Activities will include creating and holding three workshops for older adults about extreme weather and how to prepare for it, as well as a related communications campaign.

Activity	Notes
Conduct Workshops	• Held first workshop on June 26th • Held second workshop, focused on storms and flooding on October 17th at the Housing Authority ○ 18 participants ○ Metropolitan Area Planning Council staff attended ○ Seven attendees signed up for the RAVE alert system ○ Emergency kits distributed ○ Flyer translated into Mandarin and Russian and distributed, but only English speakers attended ○ Transportation offered but not used by attendees ○ Curriculum designed by Project Coordinator and will be disseminated to other health departments for replicability • Final workshop scheduled for November 12th at CATH ○ Transportation and interpreter services will be offered
Communications	• Social media, flyer distribution, and emails to partners promoted the October event • Social media, flyer distribution, and emails to partners along with a segment on cable news will occur for the November event
Reporting	• Successful site visit from funders on August 15th

Other Public Health Division activities this month:

- Researched several upcoming grant opportunities and supported a grant proposal for the MA Office on Disability
- Attended workshop on Dynamic Facilitation
- Assisted with HHS budget
- Supported vaping prevention and reduction activities

Summary overview for the month:

- Held MAPC climate change grant workshop and planned for November workshop
- Edited Needham Housing Authority Report
- Assisted with HHS budget



NEEDHAM PUBLIC HEALTH DIVISION



Unit: Accreditation

Date: October 23, 2019

Staff member: Lynn Schoeff

Activities and Accomplishments

Activity	Notes
Policies and procedures	Develop guidelines and template for taking meeting minutes.
Budget request for accreditation	Included a request to support continued focus on accreditation.

Other activities:

- Submitted a proposal to the Massachusetts Office of Disability for an improvement grant. The Department of Health and Human Services is seeking funds to conduct a self-evaluation and a transition plan to ensure that Needham's public buildings are accessible for people with disabilities.

Summary overview for the month:

Continued work on policies and procedures. Submitted a grant proposal to fund a Town-wide self-assessment and transition plan to ensure Needham is in compliance with the Americans with Disabilities Act and that all public buildings are accessible.



**Board of Health
TOWN OF NEEDHAM
AGENDA FACT SHEET**



MEETING DATE: 11/08/2019

Agenda Item	Synthetic Turf Fields and Enhanced Environmental Testing
Presenter(s)	Timothy Muir McDonald, Director of Health & Human Services Tara Gurge, Assistant Public Health Director

1.	BRIEF DESCRIPTION OF TOPIC TO BE DISCUSSED
The Board of Health will review new and emerging information about chemicals in some types of synthetic turf, and will discuss the Public Health Division's field testing process and possible changes to what is tested and sampled for testing in the current year and in future years.	
2.	VOTE REQUIRED BY BOARD OF HEALTH
No vote is required.	
3.	BACK UP INFORMATION ATTACHED
Two newspaper/periodical articles (Boston Globe and The Intercept) are attached, along with two journal articles (one from the Journal of Exposure Science & Environmental Epidemiology and the other from Environmental Science and Technology) and a backup document with additional materials supporting one of the studies.	

Toxic chemicals are found in blades of artificial turf

By [David Abel](#) Globe Staff, October 9, 2019, 8:32 p.m.

[49](#)



Kyla Bennett (left) and Tracy Stewart of Medway looked over a pile of turf in Franklin. David L. Ryan/Globe Staff

FRANKLIN — For two years, an abandoned pile of artificial turf had decomposed on a bluff here, a few feet above wetlands that are part of the suburb's drinking water supply. Nearby, ripped bags with the infill of the turf, tiny pellets of shredded tires, littered the embankment.

Public health advocates have long raised alarms about artificial turf pellets, which simulate the give of natural grass but have been shown to contain benzene, cadmium, and other known carcinogens. Now, for the first time, a new series of tests has found that the blades, and their plastic backing, may also contain toxic chemicals.

The test results showed that the turf contained elevated levels of per- and polyfluoroalkyl chemicals known as PFAS, which have been linked to kidney cancer, low infant birth weights, and a range of diseases. The findings have raised concerns about the safety of millions of square feet of artificial turf installed in recent years on public fields and playgrounds across the country.

“This is huge. It’s the first time that PFAS chemistry used in plastic production has been found in finished consumer products,” said Jeff Gearhart, research director of the Ecology Center, a nonprofit environmental research group based in Michigan that tested the turf. “This finding is maybe the tip of the iceberg. We suspect these PFAS chemicals may be found in other plastic building and consumer products.”

The concentrations of chemicals found in the wetlands near Franklin’s Beaver Field are below current federal and state health guidelines but well above standards some states have recently adopted in light of research suggesting that even low PFAS concentrations in drinking water can be harmful. Concerns about PFAS, called “forever chemicals” because they never fully degrade, have mounted in recent years. Developed in the 1940s, the chemicals have been used in products such as flame retardants, nonstick pans, pizza boxes, clothing, and furniture.

In Franklin, questions about the discarded turf led local environmental activists to send swatches of the turf and water samples for testing. The Ecology Center, working with the New England office of the Public Employees for Environmental Responsibility, a Washington D.C.-based advocacy group, found that the swatch of turf from Franklin contained 190 parts per trillion of one of the most common PFAS chemicals, well above federal safety standards for drinking water.

The group recently filed a complaint with state environmental officials about the discarded turf, saying it violated wetland protections. The water samples there contained nearly 10 parts per trillion of the same chemical found in the turf, as well as a combined 40 parts per trillion of two other PFAS chemicals.

Jamie Hellen, the Franklin town administrator, said he had no idea that the old turf was left there or that it was potentially toxic. He said he is waiting for guidance from the state Department of Environmental Protection on how to proceed.

“We will work with DEP to resolve the matter,” he said.

He noted there is no definitive link between the chemicals found in the turf and those in the water. After the Globe inquired about the piles of old turf, crews removed the material within hours.



Tracy Stewart held some runoff by the Beaver Street Field at Chilson Park in Franklin. The Boston Globe/Globe Staff

The Ecology Center also tested samples of turf installed this summer at Oliver Ames High School in Easton and found similarly high levels of another PFAS chemical. In addition, they tested eight other samples of turf blades, which they acquired directly from distributors of artificial turf, and found that all contained high amounts of fluorine, a chemical suggesting the presence of PFAS.

With as many as 1,500 new artificial turf fields installed every year — there are now some 13,000 in the United States, including hundreds in Massachusetts — public health advocates worry the potentially tainted runoff could contaminate water supplies around the country.

“PFAS in synthetic turf should sound alarm bells for all municipalities with these fields,” said Kyla Bennett, science policy director of the Public Employees for Environmental Responsibility. “All turf manufacturers should immediately disclose whether they use PFAS in their manufacturing process.”



A runner on new turf at the Beaver Street Field at Chilson Park, Beaver Street in Franklin. David L Ryan/Globe Staff

The EPA currently recommends municipalities alert the public if two of the most common PFAS chemicals reach 70 parts per trillion in drinking water, and Massachusetts uses the same threshold for five common PFAS chemicals.

But some recent studies have recommended that children not consume water with levels above 1 part per trillion and states such as New Hampshire and New Jersey have adopted stricter standards. Massachusetts is considering adopting a standard similar to one recently enacted in Vermont, advising residents to avoid drinking water if the concentration of six of the chemicals cumulatively reaches 20 parts per trillion.

A DEP spokesman said the agency is reviewing the wetlands complaint regarding Franklin, reaching out to town officials and planning a site visit.

Many communities have installed artificial turf fields because they offer clear advantages over natural grass. They don't have to be mowed or watered, require no expensive fertilizers, and allow for substantially more playing time.

Dan Bond, president of the Synthetic Turf Council, a trade group for an industry that earns \$2.5 billion a year, said repeated studies have shown no elevated health risks from artificial turf, pointing to research by the Consumer Product Safety Commission, the EPA, and state agencies.

"I haven't seen any other reports that have shown any of these concerns," Bond said, referring to the PFAS findings.

The owner of one company that produced some of the turf that the group tested was skeptical about the findings.

“We have never heard any concerns about the chemical composition of our product,” said Mike Hall, co-owner of Turf Factory Direct, a Georgia company. “I’d like to have my lawyer look at this.”

Susan Farris, a spokeswoman for Shaw Industries, another Georgia company that sells artificial turf said, “These chemicals are commonly used by synthetic turf manufacturers as a non-stick agent in the manufacturing equipment.”

Given the recent concerns about PFAS, she said, the company has phased out their use in other products, such as flooring and carpeting.

“As new formulations are available to perform the same or similar functions as PFAS chemicals have historically, Shaw has shifted to new ingredients,” she said.

Questions about the safety of artificial turf emerged five years ago when Amy Griffin, a University of Washington soccer coach, cited a large number of goalkeepers who play on turf and had contracted cancer, mainly blood-related lymphomas. By January 2019, her list included 260 young athletes with cancer.

Federal and state officials have said evidence of the health risks is limited. In 2017, a report by the state of Washington found no connection between the incidence of cancer with soccer players and their exposure to artificial turf.

But evidence of elevated PFAS concentrations may change the calculus.

“That is a big concern, since this turf is in many communities and is designed to drain precipitation off the fields, which can carry soluble contaminants into ground water underlying the turf,” said Betsy Southerland, former director of science and technology in the EPA Office of Water during the Obama administration. “Ground water, in turn, can be the direct source of drinking water for private wells and community water systems.”

David Abel can be reached at dabel@globe.com. Follow him on Twitter [@davabel](https://twitter.com/davabel).

**The
Intercept_**

TOXIC PFAS CHEMICALS FOUND IN ARTIFICIAL TURF

Sharon Lerner

October 8 2019, 9:00 a.m.



Illustration: Soohye Cho/The Intercept

PFAS chemicals have been identified in synthetic turf, according to lab tests performed on several samples of the artificial grass that were shared with The Intercept. The presence of the chemicals, members of a [class](#) that has been associated with multiple health problems, including cancer, adds to growing concerns about the grass replacement that covers [many thousands of](#)

acres in parks, schools, professional sports stadiums, and practice fields around the U.S.

In one set of tests, the PFAS chemicals were detected in the plastic backing of two samples of the turf. In another, in which the “blades” of the artificial grass were analyzed, scientists measured significant levels of fluorine, which is seen as an indication of the presence of the chemicals.

“We’re seeing unexplained levels of fluorine-based compounds in all of the eight samples of turf grass blades we’ve looked at,” says Jeff Gearhart of the Ecology Center, a nonprofit environmental research group based in Michigan that tested the turf blades. The samples of the blades that tested positive for fluorine were made by two different companies, Shaw Industries and Turf Factory Direct.

Neither Turf Factory Direct nor Shaw Industries responded to requests for comment for this story.



PFAS chemicals are used widely to help with the molding and extrusions of plastic, according to a [2005 paper](#) from the Journal of Vinyl and Additive Technology. The latest version of the synthetic turf, which is prized for its durability, is made with plastic polymers that are molded into the shape of grass blades when in molten form.

“When you extrude plastic, it’s like a cookie cutter,” explained Graham Peaslee, a professor of nuclear physics at the University of Notre Dame who has spent the last five years studying PFAS compounds. Without the PFAS, the rigid plastic used to make the turf durable clogged up the extruding machines that make the turf. “So they added fluorochemicals and now it runs through the extruders just fine.” While other chemicals can also ease the turf-making process, “the fluorinated ones work the best,” said Peaslee, who likened the PFAS in turf to “chemical hitchhikers” that are left over from the processing rather than used as ingredients.

The Synthetic Turf Council did not respond to specific questions about the presence of PFAS in turf. In an emailed response to questions from The Intercept, Dan Bond, president and chief executive officer of the Synthetic Turf Council, wrote that “STC members are at the forefront of technology that continuously improves the durability, performance and end of life uses of synthetic turf systems.”

Crumb Rubber

Any threats posed by the PFAS in the blades and backing of turf add to questions that were already swirling about the crumb rubber sprinkled over it. In 2014, soccer coach Amy Griffin realized that an [alarming number of goalkeepers had developed cancer](#) after playing on turf fields and began [tallying all the athletes](#) she could find in the same situation. By January 2019, her [list](#) included 260 young football, baseball, lacrosse, and soccer players with cancer. Griffin has repeatedly called for more research. But so far, scientists have focused on the chemicals in the crumb rubber spread over turf and not on the other components of the plastic grass.

The first artificial turf, Monsanto's "Chemgrass," was rolled out in the Houston Astrodome in the 1960s. The prominent product placement served to not only help coin the best known brand name in fake fields – "AstroTurf" – it also launched the turf era, in which billions of dollars' worth of green plastic carpets have replaced much of the real grass that had naturally coated sports fields up to this point.

As its manufacturers have pointed out, turf eliminates the needs for watering, mowing, and pesticides – and the turf industry trade group, the Synthetic Turf Council, counts "a host of environmental benefits" among its selling points. The latest version of artificial turf is made of bright green plastic blades attached to a sod-like base. In order to make the blades stand up in a passable imitation of grass, most synthetic turf has, since the late 1990s, required some sort of "infill," usually crumb rubber made from shredded tires. The tiny bits of rubber are dumped on top of the blades and, according to the Synthetic Turf Council, give the turf "the look and playability of lush grass."



Related

EPA Allowed Companies to Make 40 New PFAS Chemicals Despite Serious Risks

But the mix of chemicals composing today's turf are decidedly not grass. The rubber, which is used in huge amounts (some 40,000 tires are shredded to cover a single artificial turf field), contains heavy metals and other chemicals shown to pose serious health risks. [Environmental groups](#) have [taken issue](#) with the health risks of turf. And the Children's Environmental Health Center of the Icahn School of Medicine at Mount Sinai deemed the fake grass so dangerous it called for a [moratorium](#) on new artificial fields in 2017.

In July, the Environmental Protection Agency and the Agency for Toxic Substances and Disease Registry issued the [first](#) of two reports on the recycled crumb rubber, which found dozens of metals and volatile and semi-volatile organic compounds in the black rubber specks. Several of these compounds – including cadmium, benzene, nickel, chromium, and arsenic – are known carcinogens.

The EPA cautioned that “risks cannot be inferred from the information and conclusions found in this study” and promised that a second study to be released at a later, unspecified date will look at the exposures and risks of people who play on these fields. Yet on a [webpage](#) about the study, the agency assures visitors that “while chemicals are present as expected in the tire crumb rubber, human exposure appears to be limited.”

The turf industry welcomed the EPA study as evidence that their product doesn't cause harm, but others criticized the agency's reassurances as [premature](#). The environmental group Public Employees for Environmental Responsibility went so far as to [call](#) for the EPA to retract the July report. Kyla Bennett, PEER's science policy director, criticized the federal agency for not offering evidence for its characterization of the risk from turf as low and for failing to test the crumb rubber for more than half of the chemicals that have been associated with it.

The EPA is reviewing the PEER complaint, according to an agency spokesperson.

Blades and Backing

Bennett was also extremely disappointed that the EPA investigated only the crumb rubber from the fields and not the plastic grass blades and the backing to which they're attached. So she decided to test them herself. This summer, Bennett and a friend went to a sports field near her home in Massachusetts while new turf was being installed. She secured two samples and sent one of the turf pieces to a lab to be analyzed for the presence of specific PFAS chemicals.

The tests on the turf came back positive for a short-chain PFAS chemical (known as 27619-97-2) that was the subject of [risk reports](#) sent to the EPA between 2007 and 2011. While there is little published about the health effects on this chemical, [one](#) of those reports, submitted by DuPont in 2009, noted that some rats died after being exposed to the compound. [Another](#) noted

that the chemical induced chromosomal aberrations in hamsters' ovary cells. Nevertheless, the chemical was approved for use and is produced in large quantities, according to EPA records.

Bennett sent the other turf piece to the Ecology Center, which found that PFAS were also in the blades of the turf. The center used a new method known as a "total fluorine" analysis. Using this technique, researchers can get a total signal for all of the PFAS that are present in products as opposed to just the 30 or so that they are now able to identify and test for individually.

The Ecology Center's Gearhart used the total fluorine test to determine that about half of the hundreds of commercial and residential carpeting samples it tested at the beginning of this year contained PFAS. And Peaslee of Notre Dame, who pioneered the total fluorine method, has used it to identify PFAS in [food packaging](#), [cosmetics](#), and in the protective gear worn by firefighters, at "[thousands of times](#) over the drinking water limit."

Discarded Turf

Meanwhile Bennett found another source of turf she could test: 11 rolls of the used field covering that were sitting alongside some bags of crumb rubber a short walk from a field in Franklin, Massachusetts. New turf had been installed on the Franklin field in 2017, and the old turf had been sitting there ever since. So Bennett cut off a piece of the fraying, discarded turf and sent that for testing too. That sample came back positive for PFOS, a

chemical that is no longer in use but has been recognized as both a health threat and widespread water contaminant.

Bennett also collected water from a wetland just feet from the rolls of old turf and found that PFOS was in the water as well, suggesting another possible way that this and other PFAS chemicals may been getting into water.

Asked about the discarded turf and the presence of PFOS in both the turf and nearby water, Franklin town administrator Jamie Hellen said that he wasn't aware that turf contained any dangerous chemicals. Hellen also said that he hadn't known that the rolls of old turf had been left near the water. Days later, he sent a photo of the spot where the discarded turf had been, showing that the turf was no longer there. Bennett noticed the turf rolls stashed near some trees about a mile away from where it had last been dumped, though the bags of infill were no longer nearby.

In an email, Hellen also wrote, "The Town of Franklin has excellent fields that the community is very proud of and are very safe. The Town invests millions in taxpayer dollars into making our fields the best in the state, always trying to stay on the cutting edge of what technology offers and to have the safest fields for the public."

Franklin, Massachusetts, is hardly the only place struggling with the problem of how to discard turf once it's no longer in use. Turf eventually wears out – typically within about a decade of installation – and when it does, it needs to be replaced. Between 1,200 and 1,500 new turf fields are being installed across

the country each year, according to estimates from the Synthetic Turf Council.

The infill and turf for a single field can weigh 495,000 pounds, according to an estimate in recycling [guidelines](#) found on the Synthetic Turf Council's website. That document explains that "as with any recycle, reuse and recovery effort, the diversity of component materials may represent economic or technical challenges." It also notes that "the industry continues to research and identify the most economical and responsible way to process all turf components such as turf plastics, infill(s) and underlayment pads that need to be removed, recycled and reused."

Failures to dispose of used turf have recently grabbed public attention in Europe. The Dutch public television documentary program Zembra ran an [investigative report](#) showing that several companies falsely claimed to recycle turf and have instead stacked it in towering piles. And in [Norway](#), after turf was found discarded in the woods near waterways in June, the minister of the environment said he was considering new rules to control and clean up the dumping of turf.

Although asked repeatedly, the Synthetic Turf Council did not provide the name of any facility currently able to recycle turf in the U.S. But at least one company listed on the trade group's website does claim to do so. [Target Technologies International, Inc.](#), which is based in British Columbia, offers "a one-of-a-kind solution to recycle 100% of your used artificial turf and turn it into useful post-consumer products keeping it from ending up in our landfills, vacant properties and warehouses," according the

copy found in the online buyers' guide and membership directory of the Synthetic Turf Council.

Asked about the company's ability to repurpose turf, Target Technologies International did not provide convincing evidence. Although a [2018 report](#) from international soccer governing body FIFA on the environmental impact of turf fields noted that "a full 'closed-loop' process is yet to be developed," Nadia Minato, who answered the phone at the Target Technologies International, said that the company has recycled every bit of "maybe 75 fields" in the past five years by sending the turf to Malaysia, where it is made into "fence posts and different kinds of lumber."

When asked for details about where exactly in Malaysia the company sends the turf and what happens to it when it gets there, Minato replied that that information was "proprietary." She then supplied the email address and phone number of Thomas Lam, who she said handles the "leg work" for Target Technologies International's recycling in Malaysia. In an email sent by a third party, Lam responded to a question about how exactly the company is able to recycle 100 percent of turf with the statement, "This is one of our Trade Secrets." Asked for the location of the company's facility and any evidence that it actually recycles turf there, Lam responded that the plant is not open to the public and that "our recycled, marketable and environmentally safe, end product is a plastic fence post and they are available in the USA."

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Whether on a field, dumped in the woods, or sitting in a facility awaiting the advent of effective recycling methods, turf almost certainly ultimately releases its PFAS chemicals, according to Peaslee.

“The question is: Does it come off? And I’m pretty convinced from my previous research on textiles that it does,” he said. “When you expose the fibers to mechanical abrasion, some of these chemicals ooze from the fibers.” For Peaslee, the discovery of PFAS in turf is a troubling indication that the chemicals are likely present in other products for which they were used as a processing aid. “Turf is only the tip of the iceberg. It’s going to happen wherever they’re using PFAS as an extrusion agent,” said Peaslee, who expressed concern that widespread dumping of the turf in landfills and other places may result in water contamination.

For athletes and their parents, the presence of PFAS in turf may raise more immediate concerns about exposure to yet another group of troubling chemicals while playing on the fields. “We just don’t know yet how this might affect people,” said PEER’s Bennett. For her, the unanswered questions about PFAS in turf and in the water near where it is dumped should be met with caution. “Synthetic turf is now causing a risk to everyone who drinks water,” said Bennett, who thinks anyone planning to install turf fields should reconsider. “If there’s a potential for risk,” she said, “just don’t do it.”

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A review of the pathways of human exposure to poly- and perfluoroalkyl substances (PFASs) and present understanding of health effects

Elsie M. Sunderland^{1,2} · Xindi C. Hu^{1,2} · Clifton Dassuncao^{1,2} · Andrea K. Tokranov² · Charlotte C. Wagner² · Joseph G. Allen¹

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Abstract

Here, we review present understanding of sources and trends in human exposure to poly- and perfluoroalkyl substances (PFASs) and epidemiologic evidence for impacts on cancer, immune function, metabolic outcomes, and neurodevelopment. More than 4000 PFASs have been manufactured by humans and hundreds have been detected in environmental samples. Direct exposures due to use in products can be quickly phased out by shifts in chemical production but exposures driven by PFAS accumulation in the ocean and marine food chains and contamination of groundwater persist over long timescales. Serum concentrations of legacy PFASs in humans are declining globally but total exposures to newer PFASs and precursor compounds have not been well characterized. Human exposures to legacy PFASs from seafood and drinking water are stable or increasing in many regions, suggesting observed declines reflect phase-outs in legacy PFAS use in consumer products. Many regions globally are continuing to discover PFAS contaminated sites from aqueous film forming foam (AFFF) use, particularly next to airports and military bases. Exposures from food packaging and indoor environments are uncertain due to a rapidly changing chemical landscape where legacy PFASs have been replaced by diverse precursors and custom molecules that are difficult to detect. Multiple studies find significant associations between PFAS exposure and adverse immune outcomes in children. Dyslipidemia is the strongest metabolic outcome associated with PFAS exposure. Evidence for cancer is limited to manufacturing locations with extremely high exposures and insufficient data are available to characterize impacts of PFAS exposures on neurodevelopment. Preliminary evidence suggests significant health effects associated with exposures to emerging PFASs. Lessons learned from legacy PFASs indicate that limited data should not be used as a justification to delay risk mitigation actions for replacement PFASs.

Introduction

Poly- and perfluoroalkyl substances (PFASs) are a family of more than 4000 highly fluorinated aliphatic compounds manufactured for diverse applications [1]. They have been

widely used for their hydrophobic and oleophobic properties in consumer products such as disposable food packaging, cookware, outdoor gear, furniture, and carpet. They are also one of the main components (1–5% w/w) [2] of aqueous film forming foams (AFFF) used frequently at airports and military bases for firefighting and training activities [3]. AFFF contamination of groundwater is a major source of drinking water contamination and has been identified as a nationally significant challenge in countries such as the US and Sweden [4, 5]. Releases of PFASs to the environment can occur next to chemical manufacturing locations, at industrial sites where PFASs are used, and at various stages of product use and disposal. The carbon–fluorine bond in these compounds is extremely strong and thus many PFASs are not appreciably degraded under environmental conditions

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[6]. This has resulted in their accumulation in the environment since the onset of production in the late 1940s [7].

International concern regarding potential health effects associated with PFAS exposure began in the early 2000s when perfluorooctanesulfonate (PFOS) was detected in the blood of polar bears in the Arctic and wildlife in other remote regions [8]. Early data on PFOS bioaccumulation in aquatic food webs indicated the propensity for human exposure to these compounds through seafood [9]. The U.S. Centers for Disease Control and Prevention (CDC) later reported these compounds are detectable in the blood of virtually all Americans (98%) [10–12]. Between 2000 and 2002, the main global manufacturer of PFASs (3M) voluntarily discontinued manufacturing of the parent chemical used to produce PFOS and its precursors [13]. The US introduced a variety of programs to curb the use of the most abundant environmental PFASs, including the PFOA Stewardship Program enacted in 2006 to end production of the longest chained compounds by 2015. PFOS was added to the Stockholm Convention's list of globally restricted Persistent Organic Pollutants (POPs) in 2009.

Human exposures to PFOS and PFOA have been declining in western countries and Japan over the last decade [14–16] due to these regulatory interventions while understanding of their adverse effects on human health has been rapidly advancing [17]. At the same time, a proliferation of new PFASs has been reported in the environmental literature as the industry has rapidly replaced PFOS and PFOA with shorter chain length PFASs and new chemicals that are difficult to detect using standard methods [3]. Emerging evidence from animal experiments suggests some of these alternative PFASs can be equally hazardous [18]. Environmental health scientists thus face a considerable challenge in understanding the relative importance of diverse exposure pathways to PFASs in different human populations and their potential effects on human health in a rapidly changing chemical landscape.

Here we review current understanding of: (1) the predominant exposure pathways for PFASs for different populations, (2) health impacts associated with exposure, and (3) critical research needs for the future. We focus on four health effects: cancer, immune effects, metabolic effects, and neurodevelopment. We use this review to summarize key knowledge gaps and future research needs.

PFAS nomenclature

All PFASs contain at least one perfluoroalkyl moiety (C_nF_{2n+1}) [19]. Fully fluorinated aliphatic carbon chains are known as perfluoroalkyl substances while those with the incomplete replacement of hydrogen atoms by fluorine are referred to as polyfluoroalkyl substances. Perfluoroalkyl

acids (PFAAs) include perfluoroalkyl carboxylic, sulfonic, phosphonic, and phosphinic acids, which are differentiated by their functional groups. Most research has focused on perfluoroalkyl carboxylic acids (PFCAs) and perfluoroalkyl sulfonic acids (PFSAs) with between four and sixteen (C_4 – C_{16}) carbons. Long-chain PFASs are defined as PFCAs with seven or more perfluorinated carbons and PFSAs with six or more perfluorinated carbons. The fluorinated carbon chain of these chemicals is both hydrophobic and oleophobic but the head group for many PFASs is easily deprotonated, resulting in high stability in solution. High water solubility of some PFASs has led to their accumulation in groundwater, rivers, and the ocean and contamination of drinking water resources, fish and marine mammals.

PFAA precursors, hereon referred to as “precursors”, are compounds that can biotically, and sometimes abiotically, degrade to PFAAs [6, 20]. Volatile precursors can be transported long distances in the atmosphere prior to deposition in regions remote from pollution sources [21, 22]. Precursors are often not measured during standard PFAA analysis, which can result in an underestimate of human exposure because they can be metabolized to terminal PFAAs in the human body [23, 24].

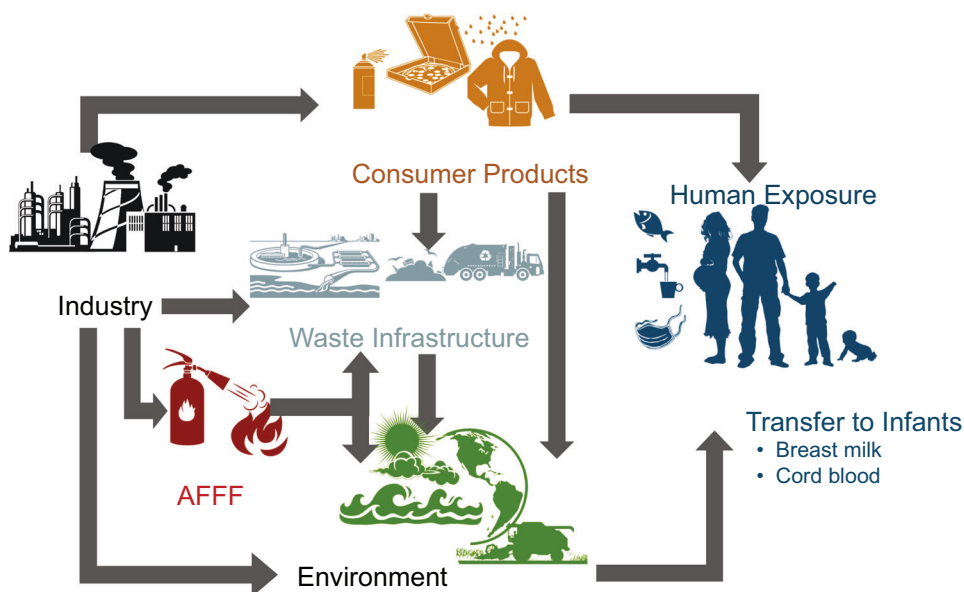
Human exposure pathways

Figure 1 provides an overview of the pathways for human exposure to PFASs. Human exposure to PFASs occurs through ingestion of contaminated drinking water and seafood, inhalation of indoor air, and contact with other contaminated media [25]. PFASs are often used for their “non-stick” and surface-tension lowering properties, which makes them useful for repelling oil and water (preventing stains) and modifying surface chemistry. The latter includes applications such as AFFF, processing aids for fluoropolymer manufacture, metal plating, and the production of semiconductors [26, 27]. Direct exposures due to use in products can be quickly phased out by shifts in chemical production but exposures driven by PFAS accumulation in the ocean and marine food chains and AFFF contamination of groundwater persist over long timescales [28, 29]. Understanding the relative importance of these different exposure pathways is thus critical for interpreting drivers of temporal differences in serum PFAS concentrations measured in biomonitoring studies [28, 30], and for anticipating future exposure risks.

Consumer products, indoor air, and dust

PFASs have been detected in jackets, upholstery, carpets, papers, building materials, food contact materials, impregnation agents, cleansers, polishes, paints, and ski waxes,

Fig. 1 Overview of PFAS exposure pathways for different human populations outside of occupational settings



among many other items commonly found in offices, households, and cars [31–40]. PFASs can migrate from fluorochemical-treated food contact papers into food-simulants such as butter, water, vinegar, and water/ethanol mixtures, indicating a direct exposure route to humans [36, 41, 42]. Dermal exposure to PFOS and PFOA from products is thought to be low [25]. In a study of 41 Norwegian women, Haug et al. [23] reported that food is typically the dominant exposure pathway, although the indoor environment (dust, air) could account for up to ~50% of the total PFAS intake.

Precursor compounds in many consumer products can be biotransformed in the human body to PFAAs, leading to additional uncertainty regarding the significance of exposures from this source [23, 24]. Inhalation of volatile precursors is known to occur and these precursors have been measured in indoor environments where PFAS containing products are used [43, 44]. The phase-out of PFOS and PFOA and their precursors has led to the increased production of short-chain compounds and structurally similar alternative compounds [3, 6], requiring a more holistic approach to determining human exposure from fluorinated compounds. To address this challenge, Robel et al. [32] measured total fluorine concentrations and determined the fraction of fluorine that can migrate from a select group of consumer products and is available for human exposure. The authors reported that typical measurement techniques for PFASs only account for up to 16% of the total fluorine measured using particle-induced gamma ray emission (PIGE) [32]. Additional research is thus needed to establish the link between the PFAS concentrations in products and the concentrations in dust, air, and food and their overall

contributions to human exposure in populations with diverse product use patterns.

Drinking water

Drinking water has been identified as a substantial source of PFAS exposure for many populations, particularly those living near contaminated sites [4, 5]. The United States Environmental Protection Agency (U.S. EPA) proposed a lifetime health advisory level for PFOS+PFOA of 70 ng/L in drinking water in 2016 [45]. In 2018, the Agency for Toxic Substances and Disease Registry (ATSDR) in the US further lowered the Minimum Risk Levels (MRLs) for PFOS and PFOA by approximately an order of magnitude compared to the reference dose (RfD) used by the U.S. EPA to develop the 2016 lifetime advisory [46]. Drinking water advisory levels corresponding to the MRLs used by ATSDR would be 11 ng/L for PFOA and 7 ng/L for PFOS. Some lifetime drinking water advisories proposed by other state and international agencies include up to 11 or 12 PFASs (Sweden and Denmark) and range from less than 10 ng/L up to hundreds to thousands of ng/L for different PFASs in Canada [47]. Notably, Grandjean and Budtz-Jørgensen [48] estimated the lifetime drinking water advisory level should be less than 1 ng/L based on the benchmark dose for immunotoxicity associated with PFAS exposure for children in the Faroe Islands.

Figure 2 shows the growth in the identification of sites contaminated by PFASs across the US between 1999 and 2017. PFAS contamination of drinking water was first reported in the US in public and private drinking water supplies near a fluoropolymer manufacturing facility in Washington, WV in 1999 [49]. The average PFOA

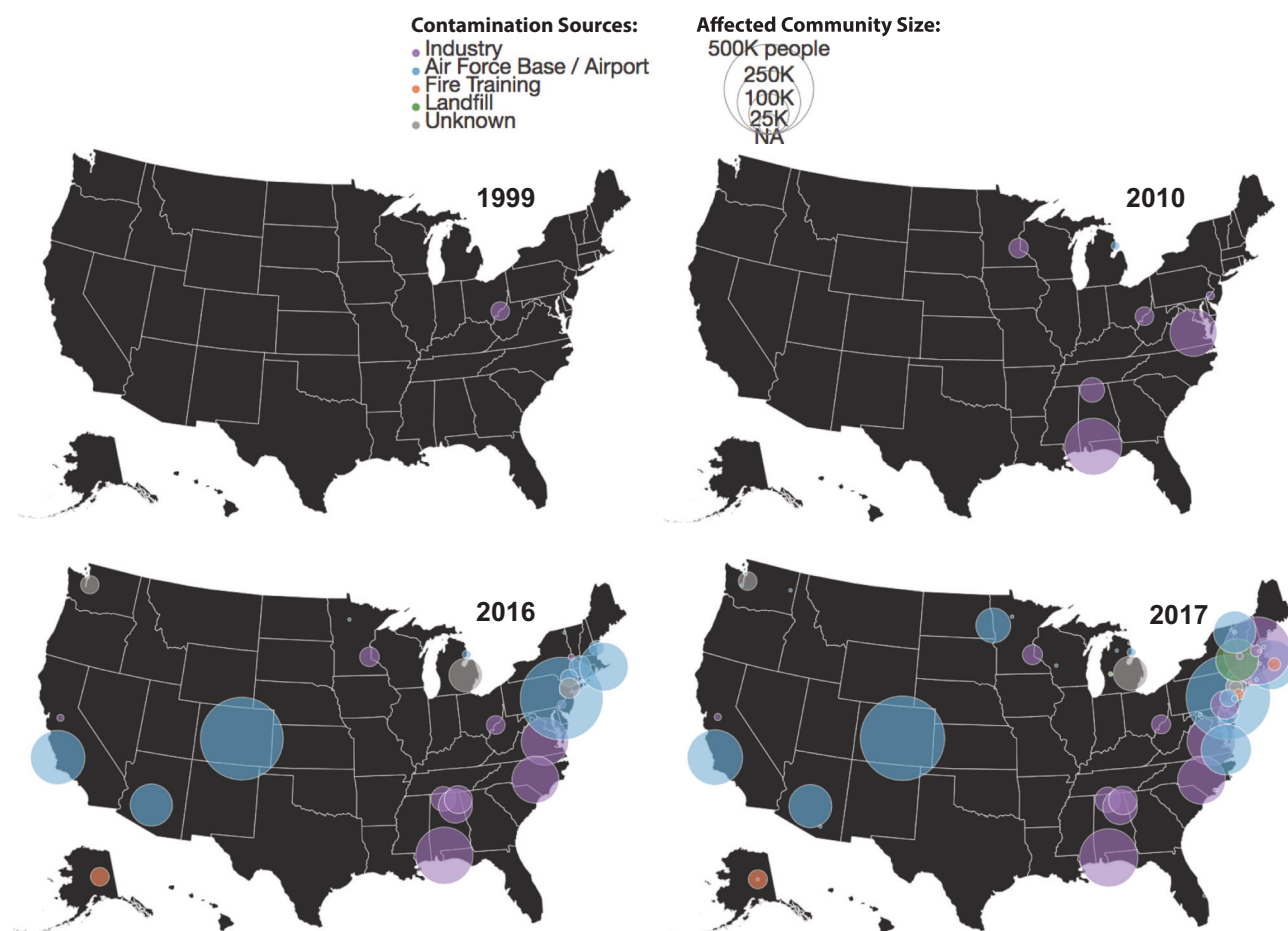


Fig. 2 Discovery of sites contaminated by PFASs leading to elevated concentrations in drinking water across the US. Figure adapted from data compiled by Northeastern University's Social Science

Environmental Health Research Institute (SSEHRI) that was last updated 12/17/17 [162]. Colors of circles represent different types of pollution source, and magnitudes indicate sizes of local communities

concentration of in one public water supply, the Little Hocking water system, was 3550 ng L^{-1} (range $1500\text{--}7200 \text{ ng L}^{-1}$) between 2002 and 2005. Drinking water contamination near a military base was first discovered in Michigan in 2010. Many additional cases of high concentrations of PFASs in finished drinking water across the US have since been reported (Fig. 2).

Most of these cases focus on single communities or small areas with a known point source of contamination. The first statewide study of PFAS occurrence in the US drinking water was conducted by New Jersey, where PFOA was detected in 59% of the public water supplies and maximum concentrations reached 190 ng L^{-1} [50]. The first nationwide occurrence survey of PFASs in public water supplies was conducted between 2013 and 2015 by the U.S. EPA under the third Unregulated Contaminant Monitoring Rule (UMCR3) [51]. Hu et al. [4] noted that drinking water concentrations of PFOS and/or PFOA exceeding the U.S. EPA 2016 health advisory levels were detected in large public water supplies serving approximately six million Americans. Further, there are no data for approximately 100

million Americans who obtain their water from small public water supplies serving less than 10,000 individuals and private wells, representing a critical research need for the future.

Following the shift in PFAS production away from PFOS, PFOA and their precursors, different PFASs may now be accumulating in drinking water and become relevant for human exposure. Newer PFASs, such as GenX, have been detected at high concentration (hundreds of ng L^{-1}) in the Cape Fear River watershed in North Carolina, downstream of a PFAS manufacturing plant [52]. The large-scale implications of such findings have yet to be evaluated and knowledge of the international significance of drinking water contamination by PFASs continues to advance at a rapid pace.

Seafood

Elevated serum concentrations of PFASs have been reported for a number of seafood consuming populations, including Inuit men in Greenland who frequently consume

seafood and marine mammals [53], whaling men in the Faroe Islands [54], and commercial fishery employees in China [55]. Seafood PFAS concentrations vary considerably with highest concentrations measured next to contaminated sites [56, 57]. Environmental concentrations of long-chain compounds appear to be the main driver of variability in tissue concentrations across sites and species [56, 58, 59]. Long-chained compounds and PFASs bioaccumulate to a greater degree than shorter chain length compounds and PFCAs [60, 61]. However, early studies of bioaccumulation potential were based on assays designed for highly lipophilic substances and therefore do not provide comprehensive information on all PFASs presently in use [58].

There is considerable variability in the contribution of seafood to the overall exposure of humans to PFASs. Cooking has been shown to reduce concentrations of some PFASs such as PFOS [59]. Christensen et al. [62] found higher concentrations of serum PFASs among high-frequency fish consumers in the U.S. National Health and Nutrition Exam Survey between 2007 and 2014. The European Food Safety Authority (EFSA) recently estimated that “fish and other seafood” account for up to 86% of dietary PFAS exposure in adults [57]. Hu et al. [63] showed that the presence of elevated serum concentrations of PFASs with $C \geq 9$ chain-length in humans is useful for identifying when seafood is a dominant exposure source. Birth cohort data from the Faroe Islands confirmed this observation by showing strong associations between serum concentrations of perfluoroundecanoic acid (PFUnDA, C11) and hair mercury concentrations, which are a strong tracer of seafood consumption [30]. Concentrations of legacy PFASs in marine biota have lagged shifts in production away from these compounds, resulting in increased significance of seafood as an exposure source [30].

Biosolids and agriculture

Many PFASs used in products or in industry enter the waste stream and are channeled to wastewater treatment plants. Wastewater treatment plants themselves are thus point sources for PFAS pollution [57]. The presence of greater than three treatment plants within a catchment has been associated with increased likelihood of PFAS detection in drinking water [4]. Data on the full suite of PFASs present in wastewater plumes are limited and this is expected to change temporally as chemical production and use in products shifts.

Figure 3 shows temporal changes in catchment level discharges of PFOS from wastewater treatment plants across the US between 1995 and 2005 [29]. PFOS discharges were modeled based on wastewater flow rates ($m^3 \text{ day}^{-1}$) from the Clean Watersheds Needs Survey (CWNS)

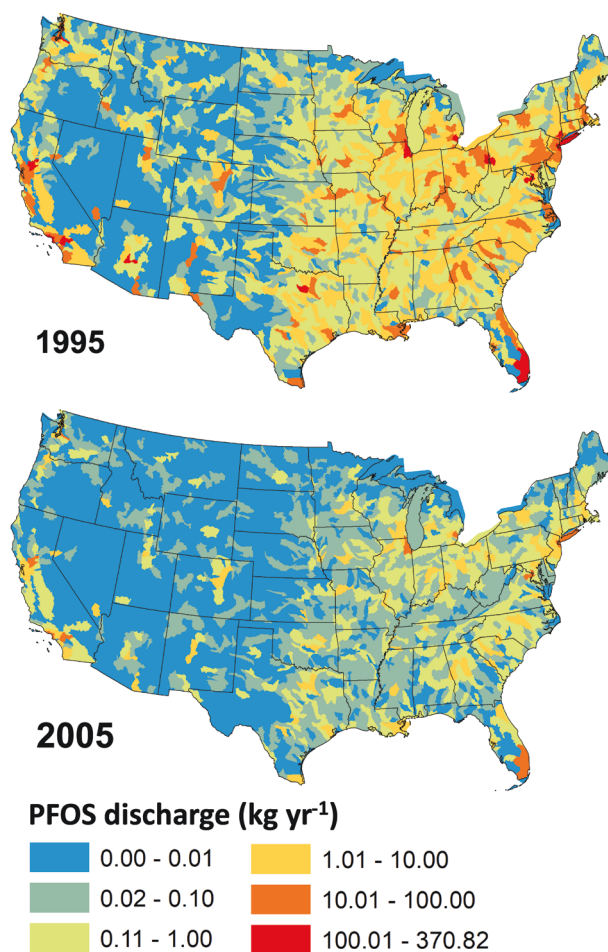


Fig. 3 PFOS discharges from wastewater treatment plants into streams and rivers across the US in 1995 and 2005. Adapted from data presented in Zhang et al. [29] and PFOS production estimates Wang et al. [166]

2008 Report to Congress and an empirical relationship between population served by wastewater treatment plants and PFOS concentrations, as described in Zhang et al. [29]. Higher levels of PFOS discharges from wastewater treatment plants are apparent in 1995 prior to the phase-out between 2000 and 2002 [26, 29]. Discharges from wastewater enter regional river networks and ultimately result in large inputs to marine ecosystems as the terminal sink. For PFOS, wastewater was thought to account for approximately 85% of releases on a continental scale, while industrial sites can be most significant at the local scale [64, 65].

Sewage sludge from wastewater treatment plants is often used for fertilizer in agriculture, presenting another potential vector for human exposure. Several studies have detected PFASs in such biosolids [66–68]. The 2001 U.S. EPA National Sewage Sludge Survey suggested that the load of PFASs in the US biosolids was $2749\text{--}3450 \text{ kg year}^{-1}$ based on the 13 PFASs measured. Of this total US load, an estimated $1375\text{--}2070 \text{ kg year}^{-1}$ was applied for agriculture and

467–587 kg year⁻¹ was transported to landfills [68]. Several studies have also investigated the uptake of PFASs into crops and earthworms from biosolids application [69–71]. In one study, concentration factors for roots relative to soil up to 4.7 and 10.3 were found for PFOS and PFOA, respectively, and all seven plants investigated displayed root concentration factors greater than one [71]. Elevated PFAS concentrations in meat and dairy products have also been reported [57, 72], suggesting PFAS uptake from biosolids contaminated agriculture is a source of dietary exposure for farm animals. Additional research on the significance of human exposures to PFASs originating from biosolids and agriculture is needed.

Approaches for quantifying exposure sources

Table 1 presents some literature estimates of source contributions to overall PFAS exposures for adults. There is general agreement that dietary intake is the largest source of PFAS exposure rather than inhalation or dermal contact. However, the relative importance of different source categories varies dramatically across demographic groups and populations (Table 1). Next to contaminated sites, drinking water has been reported to account for up to 75% of total PFAS exposure [73, 74]. Using a compilation of numerous

food samples, dietary survey data and toxicokinetic modeling, EFSA estimated that fish and other seafood dominate the chronic dietary exposure of adults to PFOS (up to 86% of total exposure). For the elderly, EFSA estimated meat and meat products account for up to 52% of PFOS exposure, while eggs and egg products account for up to 42% of infant exposure [57]. For PFOA, EFSA suggested the most important sources of chronic exposure were milk and dairy products for toddlers (up to 86% of exposure), drinking water (up to 60% for infants), and fish and other seafood (up to 56% in elderly).

Human exposures to PFASs (blood PFAS concentrations) are typically estimated using data on measured concentrations in exposure media, contact frequency, and toxicokinetic parameters [23, 25, 74–76]. The reliability of this approach depends on the accuracy of data needed to convert an external dose to internal concentrations. Many of these parameters for PFASs are poorly understood or hard to measure, resulting in large uncertainties about exposure sources (Table 1). For example, Vestergren and Cousins [74] relied on exposure estimates from multiple geographic regions to estimate total PFAS intake from the combination of dietary sources (German data), dust (data from the US and Spain) and inhalation (northwest Europe). Trudel et al. [25] tested a series of scenarios for chemical concentrations and contact frequencies across populations in Europe and

Table 1 Literature estimates of sources contributions (%) to adult PFAS exposures

PFAS	Diet	Dust	Tap water	Food Pkg.	Inhalation	Dermal	Other	Reference
PFOA	16	11		56	14		2 ^a	Trudel et al. [25]
PFOA	85	6	1	3 ^b			4 ^c	Vestergren and Cousins [74]
PFOA	77	8	11		4			Haug et al. [23]
PFOA	66	9	24		<1	<1		Lorber and Egeghy [76]
PFOA	41		37				22 ^d	Tian et al. [163]
PFOA	99		<1					Shan et al. [164]
PFOS	66	10	7		2		16 ^d	Gebbink et al. [165]
PFOS	72	6	22		<1	<1		Egeghy and Lorber [75]
PFOS	96	1	1		2			Haug et al. [23]
PFOS	81	15					4 ^a	Trudel et al. [25]
PFOS	93		4				3 ^d	Tian et al. [163]
PFOS	100		<1					Shan et al. [164]
PFBA		4	96					Gebbink et al. [165]
PFHxA	38	4	38		8		12 ^d	Gebbink et al. [165]
PFOA	47	8	12		6		27 ^d	Gebbink et al. [165]
PFDA	51	2	4		15		28 ^d	Gebbink et al. [165]
PFDoDA	86	2	2		4		5 ^d	Gebbink et al. [165]

^aCarpet

^bConsumer goods

^cPrecursors

^dIndirect

North America and found plausible ranges in PFAS exposures spanned two orders of magnitude.

Uncertainty in such estimates motivates an alternative solution that uses measured serum concentrations to identify predominant exposure sources. The ratio between two chemical homologues and the correlation among multiple chemical homologues in environmental samples, including human serum, contains information on their origin. This process is referred to as “chemometrics” and has been applied to polychlorinated biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs) [77, 78]. Applying such techniques to PFASs is complicated by dramatic shifts in production over time and the complex metabolism of PFAS precursors. In prior work, researchers have used PFAS isomer profiles to assess the relative contributions from electrochemical fluorination (ECF) and telomere manufacturing to measured PFOA concentrations in the environment [79, 80]. Zhang et al. [81] showed that the measured PFAS composition in surface water provides useful information on sources of environmental pollution. Hu et al. [63] extended this approach to human biomarkers by comparing human serum samples collected at similar time periods and controlling for physiological differences. Using cohort data from the Faroe Islands and the U.S. National Health and Nutrition Examination Survey (NHANES), the authors showed that elevated C9–C12 PFCAs were associated with predominant exposures through seafood consumption. Further, PFHxS and N-EtFOSAA were linked to exposure from consumer products such as carpet and food packaging [63].

Serum samples are routinely collected during epidemiological studies, but environmental samples pertinent to multiple exposure pathways such as drinking water, diet, air, and dust samples are not [82]. Information on contact frequency is often collected using self-reported questionnaires with known recall bias [83]. In addition, there are limited data on chemical half-lives in the human body ($t_{1/2}$) and distribution volumes (V_D) for PFASs other than PFOS, PFOA, and PFHxS. This means that traditional exposure modeling is limited to only a few relatively well-characterized individual PFASs and cannot be easily applied to the PFAS mixtures that are more relevant for human exposures.

The results presented in Hu et al. [63] are mostly qualitative and cannot quantify the percentage of PFAS exposure from different exposure pathways. This preliminary approach can be enhanced by expanding the list of PFAS analytes. Regular epidemiological studies usually report six legacy PFASs (branched and linear PFOS, PFOA, PFHxS, PFNA, PFDA) but exposure analyses would be enhanced by including additional PFASs that are increasingly relevant to current production patterns. In addition, a total mass balance is needed to provide quantitative assessments of the

relative importance of different exposure sources [84]. Routine measurements of extractable organic fluorine (EOF) in human sera would thus complement data on individual PFASs and allow such quantitative inferences from the chemometric approach [85, 86].

Temporal trends in human exposure to PFASs

The presence of organic fluorine in human blood was first detected by Taves [87] in the 1960s. Data on specific forms of organic fluorine such as PFOS and PFOA in human sera were not published until 1990 [88]. Grandjean [89] pointed out that there has been a lag of more than two decades between industry information on exposures and health effects of PFASs and academic research and regulatory action.

Declines in serum concentrations of PFASs following the phase-out in the production of the parent chemical to PFOS and its precursors between 2000 and 2002 have been reported across diverse populations worldwide and provide a success story for the effectiveness of industrial shifts and regulatory actions. These include children from the Faroe Islands [30] and the eastern US [90], adult women from the western US [91] and Sweden [92], the general Australian population [93], and Norwegian men [94]. However, declines in PFOS and PFOA have primarily driven decreasing legacy PFAS concentrations. Concentrations of total PFASs or EOF in human serum that include newer PFASs in production and precursors have not been measured for most populations. One study that examined EOF in human serum in China found the legacy PFASs measured in standard epidemiologic studies only comprised between 30 and 70% of the total fluorine [95]. These results suggest unquantified PFASs may be exhibiting different trends than legacy compounds.

Following the phase-outs in use of PFOS and PFOA in many products, C6-based fluorocarbons (including perfluorohexanesulfonic acid: PFHxS and perfluorohexanoic acid: PFHxA) were used as an initial replacement [96, 97]. Concentrations of PFHxS and PFCAs with 9–14 carbons in human serum have not decreased concomitantly with PFOS, PFOA and their precursors. No change and some increases in exposures to these compounds have been observed across populations. For example, significant increases in PFNA, PFDA, and PFUnDA and no change in PFHxS was observed in Swedish and Danish women through 2015 [92, 98]. Blood concentrations of PFNA, PFDA, PFUnDA, and PFDoDA from multiple countries show no significant change [13]. Similarly, PFHxS concentrations in the blood of Mexican American NHANES participants showed no

significant trend between 1999 and 2004 and increased from 2005 to 2008 [12, 99].

Increasing trends in concentrations of PFHxS and long-chain PFCAs are noteworthy since they significantly contribute to the overall body burden of PFASs and have longer half-lives than both PFOS and PFOA. Additionally, exposures to the C9–C11 PFCAs for some individuals are primarily from seafood consumption [30, 62, 63]. C9–C11 PFCAs exhibit different temporal patterns than PFOS and PFOA. They are bioaccumulative and concentrations in some seafood have been increasing, as discussed in Das-suncao et al. [30]. This suggests that while exposures to PFOS and PFOA have been successfully reduced by product phase-outs for many populations, exposures to C9–C11 PFCAs have not followed the same trends.

Health effects associated with exposure to PFASs

The 3M Company was the major global manufacturer of PFASs in the 1990s and conducted most of the early studies on the health effects of PFAS exposures in animals and humans [26, 100]. Many of these studies were not published in the peer-reviewed literature but can be found in the U.S. EPA public docket AR-226, and are reviewed in the section below.

Early industry studies

Before 1980, 3M conducted multiple studies of acute animal toxicity associated with exposure to legacy PFASs [101]. Serum PFAS concentrations measured as organic fluorine in 3M workers were ten times higher than the general population in 1980 [102]. Shortly after this, 3M carried out a series of subacute and chronic studies in various animal models such as rats, mice, and monkeys [103–105]. Results showed N-ethyl perfluorooctane sulfonamidoethanol (N-EtFOSE) was carcinogenic in rats after a 2-year chronic study concluded in 1988. However, the results were first misinterpreted as a null finding and only corrected a decade later [106, 107]. In a 90-day rhesus monkey study, all monkeys in all treatment groups died after 20 days and the study had to be aborted [104]. In later monkey studies with lower doses, reductions in total cholesterol, increased liver weight, and toxicity on the reticuloendothelial system (immune system) were observed [103].

Health surveillance of 3M workers produced inconsistent results, mainly due to small sample sizes and a scenario known in epidemiology literature as the “healthy worker effect” [108]. A doctoral thesis that focused on a cohort of 3M workers reported in 1992 that PFOA exposure may significantly alter male reproductive hormones and

leukocyte counts [109]. Later investigations published by 3M did not find the same associations [110]. Differences between these findings may be caused by the exposure assessment methods used: Gilliland [109] measured serum total organic fluorine while Olsen [110] measured serum PFOA concentrations. This suggests adverse effects observed in Gilliland’s work [109] may have result from exposures to fluorochemicals other than PFOA.

Academic studies

Most academic research on PFASs was initiated in the early 2000s after the voluntary phase-out in the production of the parent chemical to PFOS and its precursors by 3M, the major global manufacturer at the time. Results from experimental studies in rodents can be challenging to translate directly to human health impacts because of differences in peroxisome proliferation expression, which is one of the main mechanisms of PFASs toxicity [111]. The most comprehensive longitudinal evidence for adverse health effects associated with PFAS exposure (C8 Health Project) is from the population living near the West Virginia DuPont Washington Works fluorotelomer plant. Probable links between PFOA exposure and six diseases have been identified: high cholesterol, thyroid disease, pregnancy-induced hypertension, ulcerative colitis, and kidney and testicular cancer [112–115].

Children may be more vulnerable to PFAS exposures because they often have higher body burdens than adults and are going through sensitive windows for development. A recent systematic review of the children’s health literature identified positive associations between PFAS exposures and dyslipidemia, immunity, renal function, and age at menarche [116]. Some health effects such as immunotoxicity can be detected at lower exposure levels than others. For example, Grandjean et al. [117] examined the impact of serum PFAS concentrations on serum antibody production in children at ages 5 and 7 years following routine vaccinations for tetanus and diphtheria. A doubling of serum PFOS, PFOA, and PFHxS concentrations at age 5 was associated with a 50% decline in antibody concentrations at age 7. If this effect is causal, average serum concentrations in the general population of most countries with biomonitoring data greatly exceed the benchmark doses of 1.3 ng/mL for PFOS and 0.3 ng/mL for PFOA calculated based on immunotoxicity in children [48].

Cancer

Numerous studies have investigated PFAS carcinogenicity, mainly focusing on PFOA and PFOS. PFHxA is the only other PFAS that has been investigated in an animal study and null findings were reported [118]. Human studies for

PFOS and PFOA include chemical workers, communities with contaminated drinking water, and the general population. A 3.3-fold increase (95% CI, 1.02–10.6) in prostate cancer mortality was reported for each month spent in the chemical division with PFOA production was observed among occupationally exposed workers, but the number of cases was small [119]. Later data from this occupational cohort did not support an association between occupational exposure and cancer mortality or incidence [120]. The strongest evidence for increased cancer risk has been reported by studies among community members whose drinking water was contaminated by PFOA. Barry et al. [112] and Vieira et al. [121] showed a positive association between PFOA levels and kidney and testicular cancers among participants in the C8 Health Project. These studies form the foundation of the overall conclusion from the C8 Health Project. Results among studies conducted in general population are inconsistent. Eriksen et al. [122] were the first to examine PFOA exposure and cancer in the general population and they did not find an association between plasma PFOA or PFOS concentration and prostate, bladder, pancreatic, or liver cancer. The International Agency for Research on Cancer (IARC) classified PFOA as a possibly carcinogenic to humans (Group 2B). No IARC evaluation is available for PFOS.

Immune effects

Immunotoxicity of PFASs has been demonstrated in multiple animal models, including rodents, birds, reptiles and other mammalian and non-mammalian wildlife. Epidemiological data is relatively sparse but mounting evidence suggests that the immunotoxic effects in laboratory animal

models occur at serum concentrations that are comparable to body burden of highly exposed humans and wildlife [123].

Table 2 shows findings from a review of 25 epidemiological studies published between 2008 and 2018. Cohort data were from China, Denmark, the Faroe Islands, Japan, Norway, Taiwan, and the US and 14 out of the 25 studies reviewed were longitudinal. Two studies focused on occupational exposures and the remaining 23 were based on environmental exposures. Infants and children were the most studied demographic group for this health endpoint and accounted for 16 out of the 25 studies. Three studies considered data from teenagers in the U.S. NHANES survey. Six studies were based on either residents or workers from the C8 health project near a fluorotelomer plant in West Virginia. One study examined a group of healthy adults who received vaccination. Serum PFAS concentration measurements were the most widely used exposure assessment method, accounting for 22 out of 25 studies. Four studies from the C8 health project used job-exposure matrix or residential history to estimate lifetime cumulative exposures.

The health outcomes related to PFAS immunotoxicity include both molecular-level (i.e., antibody concentrations) and organ/system-level (i.e., infection of the respiratory system). In general, more consistent results across different studies were reported for molecular-level health endpoints such as vaccine antibody or other immune markers such as immunoglobulin (Table 1).

Five studies examined the association between PFAS exposure and suppression of antibody response to vaccination among children, adolescents or adults. Four out of the five found statistically significant associations between

Table 2 Summary of the epidemiologic literature on PFAS exposures and metabolic outcomes

Outcome	# of total studies	# of studies by results				Other PFASs
		PFOA	PFNA	PFHxS	PFOS	
Lipid profile ^a	39	21/10/1 ^b	8/1/2	4/4/2	20/9/3	Inconsistent results for PFDA, PFUnDA, PFTeDA
Insulin resistance and diabetes	18	6/9/1	3/5/0	1/2/1	7/4/1	Mostly null for PFDA, PFUnDA, PFDoDA, N-EtFOSAA, N-MeFOSAA; One positive finding for PFDoDA and insulin resistance
Hypertension, vascular disease and stroke	10	3/5/1	3/0/1	0/3/1	1/3/1	Only one study reported null for PFDA and PFUnDA
Thyroid disease	8	4/3/0	1/2/0	1/2/0	1/3/0	Positive finding for PFDA and PFUnDA in two studies. Null for PFTeDA
Cardiovascular disease	6	1/4/1	1/0/0	0/1/0	0/1/0	No other PFASs have been investigated
Uric acid	5	4/0/0	0/0/0	0/1/0	2/2/0	No other PFASs have been investigated
Overweight and obese	4	1/3/0	1/1/0	1/1/0	3/1/0	Positive finding for PFDA in only one study (Liu et al. [134])

Details of the studies examined are provided in the Supporting Information Table S1

^aLipid profile includes low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C), total cholesterol, and triglycerides

^bNumber of studies with adverse/null/protective results

higher PFAS exposure and suppressed immune response. Grandjean et al. [117] were the first to link PFAS exposure in children to deficits in immune function. The authors reported a 2-fold increase of major PFASs in child serum was associated with a -49% (95% confidence interval (CI), -67% to -23%) decline in tetanus and diphtheria antibody concentrations. This effect size is larger than later studies and can be attributed to different exposure levels, different vaccine strains, and different times elapsed since vaccination (peak antibodies vs. residual antibodies). Other studies have not examined tetanus and diphtheria, but similar associations have been found in PFAS exposure and other childhood vaccinations such as rubella and mumps [124, 125], and adult influenza vaccination such as FluMist [126] and anti-H3N2 [127].

Five out of seven studies that examined associations between PFAS exposure and immune markers found statistically significant evidence of immunosuppression. The strongest evidence has been generated for PFOA and PFOS with limited data for other PFASs. One example for other PFASs is from a case-control study in Taiwan [128] that reported that among children with asthma, nine out of the ten PFASs evaluated were positively associated with at least two of the three immunological biomarkers (immunoglobulin E (IgE), absolute eosinophil counts (AEC), and eosinophilic cationic protein (ECP)). However, this study did not account for the fact that multiple PFASs serum concentrations are positively correlated and therefore did not distinguish whether all PFASs or a subset of PFASs were associated with immune suppression.

Results with organ/system-level outcomes such as asthma, infection, and allergies are more inconsistent. Slightly more than half of the studies on asthma and infection show statistically significant results. Similar to the molecular-level outcomes, stronger evidence has been established for PFOS and PFOA than other more minor PFASs. Buser et al. [129] found serum levels of PFASs were associated with higher odds of self-reported food allergies among teenagers in NHANES 2007–2010. This is the only study out of the six studies reviewed with a statistically significant finding, but the cross-sectional design of this study necessitates further investigation using longitudinal studies. Existing studies have limitations such as outcome measurement error. For example, some studies measure asthma using a self-reported questionnaire but did not validate these data with medical records. Some studies used hospitalization due to infection as an outcome but hospitalization may not be necessary for most infections. In addition, since infection and allergy be caused by food and airborne allergens, it is challenging to identify the contribution of PFAS exposures in a low signal-to-noise setting.

Metabolic effects

We reviewed 69 epidemiological studies published between 1996 and 2018 based on human populations in Australia, Canada, China, several European countries, Japan, South Korea, Taiwan, UK, and the US. We identified 26 out of 69 studies as longitudinal and 59 out of 69 studies were based on environmental exposures. Diverse demographic groups have been studied for this health endpoint, including infants, mother–child pairs, children, teenagers, adults, workers, and special subpopulations such as diabetic patients and obese individuals in randomized clinical trials. Measured serum PFAS concentrations were the most widely used exposure assessment method (65 out of 69 studies). Two occupational studies used job-exposure matrix and work history to estimate lifetime cumulative exposures. Gilliland [130] was the earliest study and used total serum fluorine to quantify the exposure. Only one study [131] examined the different isomers of PFOA and PFOS (linear vs. branched) using data from NHANES 2013–2014.

There is relatively consistent evidence of modest positive associations with lipid profiles such as total cholesterol and triglycerides, although the magnitude of the cholesterol effect is inconsistent across different exposure levels. There is some but much less consistent evidence of a modest positive correlation with metabolic diseases such as diabetes, overweight, obesity, and heart diseases (Table 3). The majority of studies are cross-sectional, which have limited causal interpretation [132]. A few studies provided stronger evidence than observational studies, such as Diabetes Prevention Program Trial [133] and a diet-induced weight-loss trial [134].

The majority of the studies examined found associations between elevated serum PFASs and detrimental lipid profiles, such as elevated total cholesterol and low-density lipoprotein cholesterol (LDL-C), or reduced high-density lipoprotein cholesterol (HDL-C). PFOS and PFOA exhibit the most consistent finding across studies. The effect size varies across studies, which can be a result of different exposure levels. Increases in serum PFOA and PFOS from the lowest to the highest quintiles among children in C8 health project was associated with 4.6 and 8.5 mg/dL total cholesterol (reference level for children is <170 mg/dL) [135]. Among NHANES 2003–2004 participants, increases in serum PFOA and PFOS from the lowest to the highest quartiles were associated with 9.8 and 13.4 mg/dL total cholesterol (reference level for adults is <200 mg/dL) [136]. Maisonet et al. [137] reported a non-linear relationship between prenatal PFOA concentrations and total cholesterol at ages 7 and 15 of the child.

Eighteen studies have examined the associations between PFAS exposures and glucose metabolism, insulin resistance, and diabetes. Overall the results across different

Table 3 Summary of the epidemiologic literature on PFAS exposures and immunotoxicity

Outcome	# of total studies	# of significant studies	# of significant studies by each PFAS
Vaccine antibody	5	4	Mixture: 1; PFOA: 2; PFNA: 1; PFHxS: 1; PFOS: 2
Immune markers	7	5	PFHpA: 1; PFOA: 5; PFNA: 2; PFDA: 1; PFTeDA: 1; PFDoA: 1; PFBS: 1; PFHxS: 2; PFOS: 4
Asthma and biomarker of asthma	9	5	PFHpA: 1; PFOA: 5; PFNA: 3; PFDA: 3; PFDoDA: 1; PFBS: 1; PFHxS: 2; PFOS: 4
Infection and other autoimmune diseases	13	8	PFOA: 6; PFOS: 4; PFDA: 1; PFDoDA: 1; PFNA: 2; PFUnDA: 1; PFHxS: 1; PFOSA: 1
Allergy	6	1	PFOA: 1; PFHxS: 1; PFOS: 1

Details of the studies examined are provided in the Supporting Information Table S2

studies are inconclusive. Lin et al. [138] were the first to report a positive association between serum PFAS concentrations and glucose homeostasis among adults and adolescents in NHANES. They reported a considerable effective size—doubling serum PFNA concentrations was associated with hyperglycemia odds ratio (OR) of 3.16 (95% CI 1.39–7.16). Later studies tend to report smaller effect sizes. Exposure during pregnancy may affect the mother and child during gestation and later in life. In a small pregnancy cohort in the US, each standard deviation of increase in PFOA was associated with a 1.87-fold increase of gestational diabetes risk (95% CI 1.14–3.02) [139]. In a larger Spanish cohort, a null result was reported for PFOA, but PFOS, PFHxS, and gestational diabetes had positive associations: OR per log10-unit increase = 1.99 (95% CI: 1.06, 3.78) and OR = 1.65 (95% CI: 0.99, 2.76), respectively [140].

Results for hypertension and other vascular diseases including stroke are also inconsistent. Two of the earliest studies examined the relationship between PFAS exposure and hypertension among NHANES and found different results for children and adults. Adjusted OR = 2.62 for hypertension comparing 80th vs. 20th percentiles serum PFOA among NHANES adults in the US [141], while among children a null finding was reported [142]. In some later cohort studies, null results and even protective effects associated with PFAS exposure and hypertension were reported [143, 144]. A cross-sectional study on carotid artery intima-media thickness in adolescents reported increased risks with an increase in plasma PFOS [145]. However, a more recent study on artery stiffness found protective effects of PFOA and PFNA among children and adolescents enrolled in the World Trade Center Health Registry [146].

Other metabolic endpoints include thyroid disease (which could also be considered an endpoint for endocrine disruption), cardiovascular diseases, uric acid metabolism, and body weight. Except for uric acid metabolism, most results are inconclusive. An increase in hyperuricemia risks and PFOA exposure was observed in all four studies (two from NHANES and two from C8 Health Project).

In summary, the strongest evidence for a relationship between PFAS exposure and metabolic outcome is in the area of dyslipidemia. Animal studies have found decreases in serum cholesterol levels associated with increased PFAS exposures, which contradicts epidemiological findings. The difference may lie in different levels of expression for nuclear receptors involved in the toxicological pathway, such as peroxisome proliferator-activated receptor (PPAR)-alpha. It may also be related to differences in exposure levels. Dietary factors can influence metabolic outcomes [147], introducing bias into observed relationships if not controlled for properly. Explanations for null findings

include healthy worker effects and non-linear relationships, such as decreasing slopes as exposure increases (log-linear relationships) [148].

Neurodevelopmental effects

In vitro studies suggest PFOS can trigger the “opening” of tight junction in brain endothelial cells and increase the permeability of the blood brain barrier [149]. There has therefore been some interest in investigating the neurotoxic effects associated with PFAS exposures. In laboratory animals, it has been reported that PFOS, PFOA, and PFHxS exposures during the peak time of rapid brain growth in mice resulted in an inability to habituate in the unfamiliar environment [150]. Liew et al. [151] reviewed 21 epidemiological studies in 2018 and concluded that evidence is mixed regarding neurodevelopmental effects of PFAS exposures. Health outcomes examined included developmental milestones in infancy, attention-deficit/hyperactivity disorder (ADHD) and behaviors in childhood, and neuropsychological functions such as IQ and other scales or scores. Neurodevelopmental trajectories are highly complicated and there is great heterogeneity in the instruments and methods to evaluate neurodevelopmental endpoints. Additional research is needed to establish a link between neurodevelopmental outcomes and PFAS exposures.

Future directions

Challenges associated with quantifying the full-diversity of individual PFASs present in environmental samples and a paucity of toxicity data highlight the need for data and tools to better understand new and emerging fluorinated compounds. EOF provides an estimate of all combustible organofluorine compounds present and provides a proxy measure for unquantified PFASs [86]. Yeung and Mabury [152] reported that quantifiable PFASs accounted for 52–100% of EOF in human plasma samples collected between 1982 and 2009 in two German cities. The amount and proportion of unidentified organofluorine in human plasma increased after 2000 in one city. This study hypothesized that humans are exposed to many new and unidentified organofluorine compounds, which is consistent with the environmental exposure literature [3, 74, 153, 154].

The toxicity of new and emerging PFASs for ecosystems and humans is poorly understood. This is problematic because in communities with high concentrations of alternative PFASs, the magnitude of potential health impacts associated with exposures has not been quantified and such information is generally considered necessary to engage in risk mitigation actions. Chemical manufacturers have claimed that replacement PFASs are not associated with

adverse health effects and that shorter-chain homologues with shorter half-lives in the human body are not likely to bioaccumulate [155, 156]. However, ongoing work suggests shorter chain compounds have a higher potential to interact with biomolecules due to less steric hindrance than the longer chain homologues [157, 158]. For example, fluorinated carbon chains in perfluoroalkyl ether carboxylic acids (PFECAs), an important new class of PFASs, are broken into shorter units by the insertion of oxygen molecules that are thought to make them more reactive [159]. One known PFOA alternative is the ammonium salt of perfluoro-2-propoxypropanoic acid, a PFECA that has been produced since 2010 with the trade name “GenX” [160]. A recent hazard assessment based on the internal dose of GenX suggests it has higher toxicity than PFOA after accounting for toxicokinetic differences [18]. The extreme environmental persistence, bioaccumulation, and potential toxicity of the entire class of PFASs has led some researchers to question the use of any highly fluorinated chemicals and call for a class approach in managing them [161].

In summary, additional research is needed to better understand the exposure pathways and health outcomes associated with emerging PFASs and to understand the timescales of exposures to legacy PFASs associated with drinking water and seafood contamination. Risk mitigation measures require new technology for reducing PFAS concentrations at contaminated sites and in drinking water supplies. Delayed action on legacy PFASs has resulted in widespread human exposures and risks and lessons should be learned from this example and not repeated for the newer PFASs entering the market [89]. Although additional data are needed to understand the full extent of impacts of PFAS exposures on human health, particularly at sensitive life stages, we assert that this should not be used as a justification for delaying risk mitigation actions. The phase-out in PFOS and its precursors between 2000 and 2002 was extremely effective at rapidly reducing exposures of humans and wildlife globally to these compounds and provides an example of the potential benefits from the coordinated global action.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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Total Fluorine Measurements in Food Packaging: How Do Current Methods Perform?

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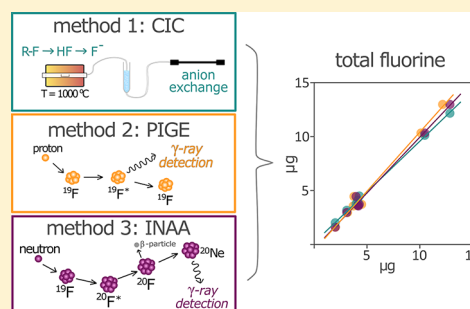
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Supporting Information

ABSTRACT: Per- and polyfluoroalkyl substances (PFASs) represent a class of more than 4000 compounds. Their large number and structural diversity pose a considerable challenge to analytical chemists. Measurement of total fluorine in environmental samples and consumer products is therefore critical for rapidly screening for PFASs and for assessing the fraction of unexplained fluorine (i.e., fluorine mass balance). Here we compare three emerging analytical techniques for total fluorine determination: combustion ion chromatography (CIC), particle-induced γ -ray emission spectroscopy (PIGE), and instrumental neutron activation analysis (INAA). Application of each method to a certified reference material (CRM), spiked filters, and representative food packaging samples revealed good accuracy and precision. INAA and PIGE had the advantage of being nondestructive, while CIC displayed the lowest detection limits. Inconsistencies between the methods arose due to the high aluminum content in the CRM, which precluded its analysis by INAA, and sample heterogeneity (i.e., coating on the surface of the material), which resulted in higher values from the surface measurement technique PIGE compared to the values from the bulk volume techniques INAA and CIC. Comparing CIC-based extractable organic fluorine to target PFAS measurements of food packaging samples by liquid chromatography–tandem mass spectrometry revealed large amounts of unidentified organic fluorine not captured by compound-specific analysis.



1. INTRODUCTION

Per- and polyfluoroalkyl substances (PFASs) are a class of ubiquitous chemicals that have found innumerable industrial and consumer applications over the past seven decades.¹ PFASs can be categorized as polymeric or nonpolymeric,² collectively amounting to more than 4700 CAS-registered substances according to the OECD.³ Environmental concerns pertaining to PFASs are centered primarily on the perfluoroalkyl acids (PFAA), a subclass of PFAS which display extreme persistence and chain-length-dependent bioaccumulation and adverse effects in biota.²

The water- and grease-repellent properties of PFASs have led to their extensive use in food contact paper and packaging. Concentrations in the range of 1.0–1.5% per fiber dry weight are typical in most finished products.⁴ Historically, most fluorinated coatings for paper and board were based on perfluorooctanesulfonate (PFOS) precursors, such as *N*-ethyl perfluorooctane sulfonamido alcohol-based phosphate diesters (SamPAPs).^{5,6} However, as a consequence of the phase-out of PFOS and its precursors by 3M in 2001, most contemporary formulations are now based on acrylate polymers with fluorotelomer or sulfonamido alcohol side chains or perfluoro-

polyether-based polymers (PFPEs).^{4,7} Several peer-reviewed studies have reported the occurrence of PFAAs, polyfluoroalkyl phosphates (PAPs), fluorotelomer alcohols, and saturated and unsaturated fluorotelomer acids in various types of food packaging materials.^{5,8–13} While the importance of PFASs in food packaging as a human exposure source remains unclear, some PFASs have been shown to migrate from food packaging into food.^{14,15} In response to concerns surrounding PFASs, several states in the United States have implemented bans on the use of these chemicals in food packaging,¹⁶ and the Danish Ministry of the Environment and Food has established a total fluorine indicator value of 0.1 $\mu\text{g}/\text{cm}^2$ in food packaging.¹⁷

Given their vast number and structural diversity, a comprehensive characterization of PFASs in consumer products represents a considerable analytical challenge.¹⁸ Typically, a limited number of PFASs are quantified using a

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combination of solvent extraction and either liquid chromatography–tandem mass spectrometry (LC–MS/MS; ionic PFASs) or gas chromatography–mass spectrometry (GC–MS; semivolatile PFASs). These methods cannot capture all PFASs, and even when high-resolution MS is employed (i.e., suspect or nontarget screening), a lack of authentic standards precludes unequivocal identification and quantification. As a result, questions about how many PFASs are missed during routine analysis remain. Several analytical approaches have emerged for quantifying total fluorine (TF) regardless of chemical structure or molecular weight (reviewed by McDonough et al.¹⁹). These approaches can be used for rapid screening of PFASs or in combination with targeted analyses (i.e., LC–MS/MS or GC–MS) to assess the fluorine mass balance in a sample. Combustion ion chromatography (CIC) is the most common method and was first used for fluorine mass balance experiments in 2007 by Miyake et al.²⁰ Since then, there have been several applications of CIC for determination of TF in environmental samples and consumer products.^{21–24} Another method, particle-induced γ -ray emission (PIGE) spectroscopy, is a long-established ion beam technique used for analysis of solid materials.^{25–28} The approach was recently applied to papers and textiles by Robel et al., who showed that Σ PFAS concentrations accounted for a mere 0.2–14% of the TF content.²⁹ Lastly, instrumental neutron activation analysis (INAA) is another nuclear technique with widespread uses,^{30–32} with one recent application involving measurement of fluorine in biological and environmental matrices.³³ The current paper reports the first application of INAA to consumer products. Other approaches for measuring TF exist, such as inductively coupled plasma (ICP) MS,³⁴ molecular absorption spectroscopy,³⁵ and X-ray photoelectron spectroscopy;³⁶ only the latter has recently been applied to fluorine mass balance experiments in consumer products. The data produced by these approaches have not yet been compared. This is clearly needed, given the growing interest in fluorine mass balance experiments and the use of TF for regulation of PFASs in consumer products.

The objectives of this study were (1) to compare the accuracy, precision, linearity, and detection limits of TF measurements by CIC, PIGE, and INAA, (2) to assess the limitations of each approach, and (3) to assess the fluorine mass balance in several food packaging materials from the Swedish market using LC–MS/MS and CIC.

2. MATERIALS AND METHODS

2.1. Sample Collection and Preparation. Total fluorine measurements from three different laboratories were compared using (a) a certified reference material (CRM), (b) PFOA-spiked cellulose filters, and (c) a variety of food packaging materials (Table S1). CIC analysis was carried out at Stockholm University (SU); PIGE analysis was carried out at the University of Notre Dame (UND), and INAA was carried out at the University of Missouri Research Reactor (MURR). The CRM (BCR-461, fluorine in clay) was purchased from Sigma-Aldrich and subsampled at SU into 13 mL polypropylene tubes prior to being shipped to UND and MURR for direct analysis. Cellulose filter papers (Whatman) were prepared by UND by spiking perfluorooctanoic acid (PFOA) solutions (prepared in methanol with food coloring to determine the area with which the standard was applied) with total masses of 0, 1.9, 3.8, 9.5, 19.1, and 38.2 μ g of PFOA. The methanol was evaporated to dryness prior to analysis.

Triplicates of each PFOA-spiked filter were sealed in individual zip-lock bags and shipped to SU and MURR for analysis. Finally, three french-fry bags (FF1–FF3) and six microwave popcorn bags (MP1–MP6) purchased in Sweden in 2012 were selected for analysis in this study. Pieces (2 cm $\times$ 2 cm) of each sample were cut and sealed in individual zip-lock bags and shipped to UND and MURR for analysis.

2.2. Extraction of Food Packaging. For targeted PFAS analysis, food packaging samples were extracted according to a Gebbink et al.³⁷ In short, samples (5 cm $\times$ 5 cm) were cut into small pieces, fortified with internal standards (0.5 ng each), and stirred in 40 mL of methanol at room temperature for 8 h. The extract was concentrated under a stream of nitrogen to approximately 1 mL, cleaned up using EnviCarb, and fortified with a recovery standard (0.5 ng). For analysis of total extractable organic fluorine (EOF), the extraction procedure was modified slightly by omitting the addition of internal and recovery standards and cleanup by EnviCarb.

2.3. Instrumental Analysis. Detailed descriptions of instrumental analysis and quantification for CIC, PIGE, and INAA can be found in the [Supporting Information](#). A brief overview is provided here.

2.3.1. TF and EOF Analysis by CIC. TF and EOF were analyzed according to the method described by Schultes et al.²⁴ Briefly, samples (neat samples and extracts) were placed directly onto a ceramic boat that was introduced into a combustion oven (HF-210, Mitsubishi) heated to 1100 °C under an atmosphere of argon (carrier gas) and oxygen (combustion gas) for $\sim$ 5 min. All gases were collected in Milli-Q water (GA-210, Mitsubishi). Ions were separated on an ion exchange column and measured by conductivity detection.

2.3.2. TF Analysis by PIGE. TF was analyzed according to the method described by Ritter et al.²⁸ Briefly, samples were mounted across a stainless steel target frame and bombarded with a 3.4 MeV beam of protons ($\sim$ 50 nA for 180 s) to produce γ -rays, which were measured using a high-purity germanium detector (HPGe, Canberra, 20%) located at approximately 75° to the beam. The combined number of counts of two γ -rays characteristic of the decay of the ¹⁹F nucleus at 110 and 197 keV/ μ C of beam delivered is proportional to the TF. The beam intensity was measured in a suppressed Faraday cup before and after each 3 min run and normalized to a current measured in a tantalum collimator near the beam exit window. For the powdered CRM material, replicate targets were prepared by hydraulically compressing the powder into a self-supporting pellet at approximately 350 bar for 30 s and then taped onto target frames.

2.3.3. TF Analysis by INAA. Samples were analyzed according to the method described by Spate et al.³² Briefly, samples were weighed into 0.5 mL high-density polyethylene (HDPE) vials. The vials were encapsulated in HDPE “rabbits” for irradiation in the pneumatic tube irradiation position of the MURR at a neutron flux of 5.5×10^{13} n cm^{−2} s^{−1}. Samples were irradiated for 7 s, decayed for 11 s, and were counted for 30 s using an HPGe detector (Canberra, 20%). The ²⁰F decays (11.03 s half-life) by β -particle emission with a characteristic γ -ray at 1633.6 keV. A correction was made for the fast neutron reaction ²³Na(n, α)²⁰F using a single-element Na standard irradiated and counted under the same conditions. The neutron activation product ²⁴Na emits a characteristic γ -ray at 1368.6 keV. The measured ratio of the 1633.6 keV/1368.6 keV γ -ray in the single-element standards is used to correct interference in the samples based on the measured 1368.6 keV

γ -ray. The correction in samples analyzed in this study was <1%.

2.3.4. Target PFAS Analysis by UHPLC–MS/MS. Target PFASs, including perfluoroalkyl carboxylic acids (PFCAs, C4–C15), perfluoroalkyl sulfonic acids (PFSAs, C4, C6, C8, and C10), perfluorooctane sulfonamide (FOSA), perfluoroalkane sulfonamidoacetic acids, fluorotelomer sulfonates (4:2, 6:2, and 8:2 FTSAs), fluorotelomer carboxylic acids (5:3, 7:3, and 9:3), ADONA, F53-B, and polyfluoroalkyl phosphoric acid mono- and diesters (mono- and diPAPs, respectively), were analyzed using a Waters Acquity UHPLC instrument coupled to a Xevo TQ-S triple-quadrupole mass spectrometer according to the methods described by Vestergren et al.³⁸ and Gebbink et al.³⁷ Instrumental parameters are listed in Table S2. Limits of detection (LODs) for individual PFASs are based on the average concentration in the extraction blank plus 3 times the standard deviation. In the absence of a blank signal, the LOD was based on the concentration of the lowest calibration standard at a minimum signal-to-noise ratio of 3. Individual LODs are listed in Table S8.

2.4. Fluorine Mass Balance Calculations. To compare PFAS concentrations (C_{PFAS} , nanograms of PFAS per gram) derived from UHPLC–MS/MS analysis to EOF and TF ($C_{\text{F, EOF}}$ and $C_{\text{F, TF}}$, respectively; nanograms of F per gram) measured by CIC, molecular PFAS concentrations are converted to fluorine equivalents using the following equation:

$$C_{\text{F, PFAS}} = n_{\text{F}} \times A_{\text{F}} / MW_{\text{PFAS}} \times C_{\text{PFAS}} \quad (1)$$

where $C_{\text{F, PFAS}}$ (nanograms of F per gram) is the corresponding fluorine concentration of a given PFAS, n_{F} is the number of fluorine atoms on the molecule, MW_{PFAS} is the molecular weight of the PFAS, and A_{F} is the atomic weight of fluorine.

The total known extractable fluorine concentration ($\Sigma C_{\text{F, PFAS}}$, nanograms of F per gram), which is the sum of all individual $C_{\text{F, PFAS}}$ values, can be related to $C_{\text{F, EOF}}$ by eq 2:

$$C_{\text{F, EOF}} = \Sigma C_{\text{F, PFAS}} + C_{\text{F, extr. unknown}} \quad (2)$$

where $C_{\text{F, extr. unknown}}$ (nanograms of F per gram) is the total concentration of unidentified, extractable organic fluorine.

Lastly, $C_{\text{F, EOF}}$ and $C_{\text{F, TF}}$ are related to each other via the total nonextractable fluorine concentration ($C_{\text{F, non extr.}}$, nanograms of F per gram) according to eq 3:

$$C_{\text{F, TF}} = C_{\text{F, EOF}} + C_{\text{F, non extr.}} \quad (3)$$

2.5. Quality Assurance and Quality Control. Accuracy and precision were assessed through (a) replicate ($n = 3$) spike–recovery experiments using printer paper fortified with 36 native PFASs (targeted analysis) and (b) comparison of replicate ($n = 8$) measurements of the CRM to certified concentrations (TF analysis). Extraction blanks were processed in every batch to monitor for background contamination, while solvent blanks were injected intermittently during UHPLC–MS/MS and CIC analysis to monitor for carryover. Statistical analysis was carried out at an $\alpha = 0.05$ confidence level in all instances.

3. RESULTS AND DISCUSSION

3.1. Total Fluorine Method Comparison. A comparison of the measured ($n = 8$) versus certified concentrations ($568 \pm 60 \mu\text{g/g}$) of CRM BCR-461 revealed no statistically significant differences for CIC ($p = 0.18$) or PIGE ($p = 0.84$) [one-sample t tests (Figure 1a and Table S3)], indicating good accuracy

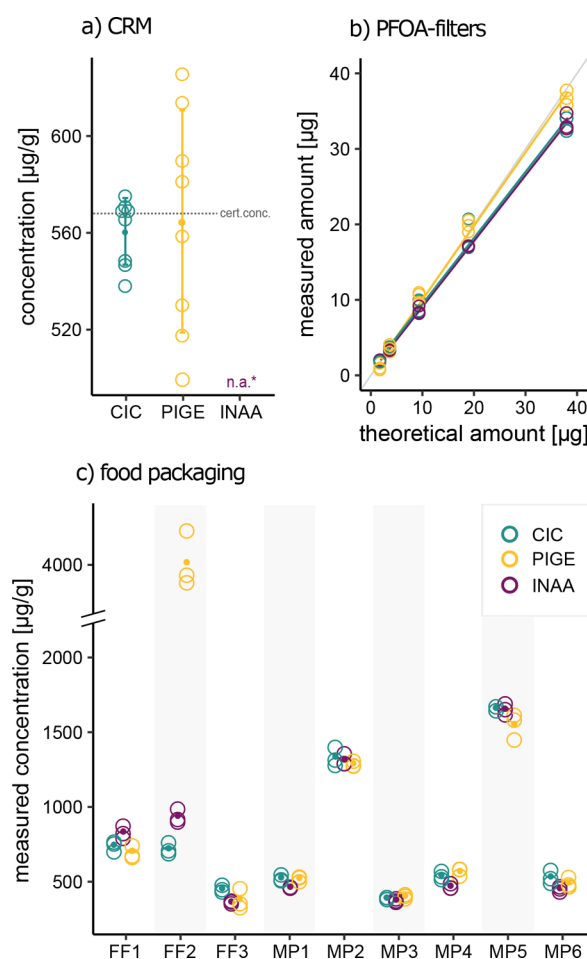


Figure 1. Comparison of TF methods (CIC, PIGE, and INAA) by means of (a) certified reference material (CRM) measurements ($n = 8$; circles) and means (dots) (the error bar represents the standard deviation, and the gray line indicates the certified concentration), (b) PFOA-spiked filter measurements vs theoretical concentrations (the gray line indicates slope = 1 and intercept = 0), and (c) food packaging samples (circles, data points; dots, means). Note the discrepancy in FF2 by PIGE due to the thickness and heterogeneity of this paperboard sample. *n.a., not analyzed due to interference.

for both methods. Precision was also reasonable for both approaches but slightly better for CIC (2.5% CV) than for PIGE (8.1%; $p = 0.005$; F-test). INAA was unable to measure F in the CRM due to the high Al content. The ^{27}Al captures a neutron, yielding unstable ^{28}Al , which decays by β -emission with a characteristic γ -ray at 1779 keV. The high levels of Al in geological materials result in detector dead times of >90% for the F analysis. Thus, INAA was deemed unsuitable for this matrix.

PFOA-fortified filters (six fortification levels, including a blank, each prepared in triplicate) were measured by CIC, PIGE, and INAA (Figure 1b and Table S4). The blank filters were below the LOD for all methods and therefore excluded from statistical analysis. Concentrations measured by CIC were, on average, 2.1% higher than those from PIGE and 4.1% higher than those from INAA, while those from PIGE were 1.9% higher than those from INAA. Repeated t tests with Bonferroni correction revealed that these differences were not statistically significant (for individual p values, see Table S6). All methods displayed good linearity ($r^2 > 0.99$) and precision

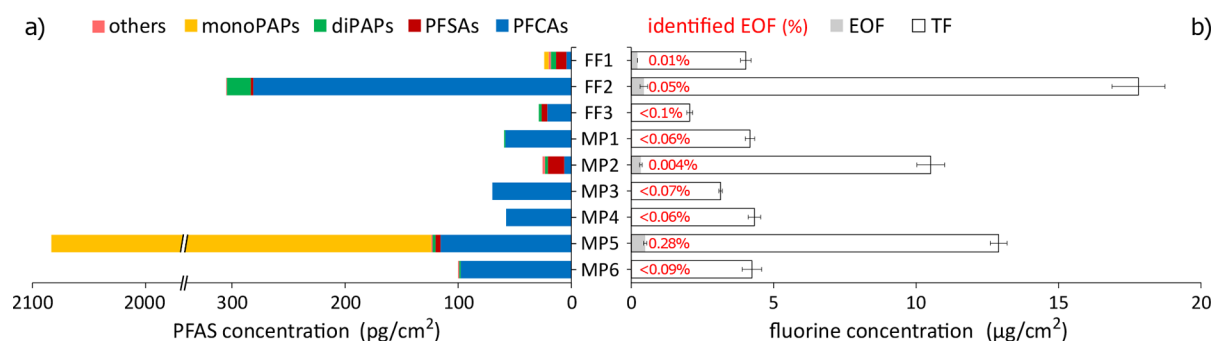


Figure 2. Fluorine mass balance in food packaging samples comprising (a) PFAS concentrations displayed as the sum of each class (in picograms per square centimeter) as measured by UHPLC–MS/MS and (b) total fluorine and extractable organic fluorine contents (error bars represent the standard deviation of triplicate measurements) in micrograms per square centimeter as measured by CIC. The percentage of EOF identified by the sum of target PFAS (ΣC_{F_PFAS}) is indicated in red.

[CV; 3–12% (CIC), 3–39% (PIGE), and 2–6% (INAA)] over the range of concentrations on the filters.

Nine food packaging materials were analyzed in triplicate by CIC, PIGE, and INAA (Figure 1c and Table S5). It is important to note that while measurement replicates were obtained for PIGE and INAA, the destructive nature of CIC requires technical replicates to assess precision. Another difference between methods arises from the fraction of the sample that contributes to the fluorine signal. For example, depending on the penetration depth of the PIGE particle beam, only the surface F content is measured in thick samples; in contrast, CIC and INAA measure the F content of the entire sample independent of material thickness. As a result, TF measurements determined by PIGE will be higher than those determined by INAA and CIC for surface-coated products when expressed on a weight basis. This difference is clearly demonstrated through measurements of FF2, which was the only thick paperboard material analyzed in this work and was over-reported by PIGE relative to CIC and INAA. When FF2 was excluded, CIC produced TF concentrations that were, on average, 2.4% higher than those produced by PIGE and 7.3% higher than those produced by INAA, while PIGE measurements were an average of 4.9% higher than INAA measurements. These differences were not statistically significant [two-way analysis of variance with replication ($p = 0.39$)]. All methods showed good precision [CV; 2–8% (CIC), 1–8% (PIGE), and 1–6% (INAA)]. Assuming a 10 mg sample size, detection limits were lowest for CIC (0.8 $\mu\text{g/g}$), followed by INAA (20 $\mu\text{g/g}$) and PIGE (38 $\mu\text{g/g}$).

3.2. Fluorine Mass Balance of Food Packaging Samples. **3.2.1. Target PFAS Analysis.** A total of 22 of 44 target PFASs were detected in the food packaging materials investigated here with $\Sigma_{44}\text{PFAS}$ concentrations ranging from 23.9 to 2220 pg/cm^2 (Figure 2a and Table S8). Spike-recovery experiments demonstrated good accuracy and precision of the targeted PFAS analysis (see Table S7). PFTeDA, PFDODA, PFHpA, 6:2 diPAP, PFHxA, 6:2/8:2 diPAP, and 8:2 diPAP were detected in >50% of the samples. 10:2 monoPAP was detected at by far the highest concentration (2100 pg/cm^2) but only in a single sample (MP5). In all other samples, the contribution of PFAA precursors was minor. PFCAs were the major compound class in 6 samples (FF2, FF3, MP2–MP4 and MP6), with PFHxA (<0.37–160 pg/cm^2) accounting for 53–90% of $\Sigma_{44}\text{PFAS}$ concentrations in these samples. PFOA was detected in only FF2 and MP5 (4.32 and 22.4 pg/cm^2 , respectively), possibly

reflecting the shift among industries from C8 to C6 chain lengths.

3.2.2. Fluorine Mass Balance. CIC-based C_{F_TF} concentrations in food packaging [2.05–17.8 $\mu\text{g/cm}^2$ (Figure 2b)] were high relative to the Danish Ministry of the Environment and Food indicator value of 0.1 $\mu\text{g/cm}^2$. This value was established as a means of differentiating between intentionally added and background PFASs in food packaging.³⁹ The C_{F_EOF} was greater than the method detection limit (MDL) (0.04–0.07 $\mu\text{g/cm}^2$) in four samples, but low (0.22–0.49 $\mu\text{g/cm}^2$) compared to C_{F_TF} (accounting only for 0–5.5%). No significant correlations were observed among C_{F_TF} , C_{F_EOF} , and ΣC_{F_PFAS} . According to eq 3, $C_{F_non\ extr.}$ was high in all samples, ranging from 94.5 to 99.9%. These findings affirm the presence of polymeric coatings [e.g., perfluoropolyethers and fluorotelomer (meth)acrylate-based side-chain fluorinated polymers] on these papers and paperboards, as polymers have low solubility in most nonfluorinated solvents.⁴⁰ Furthermore, the fractions of C_{F_TF} and C_{F_EOF} explained by ΣC_{F_PFAS} were negligible in all samples [means of 0.002 and 0.08%, respectively (Table S9)], leaving the majority of TF and EOF unattributed. Therefore, we assume that our UHPLC–MS/MS method does not capture the PFASs intentionally used in these products. Here it is germane to note that possible degradation products and/or unreacted monomers of the aforementioned polymeric coatings [e.g., FTOHs, fluorotelomer olefins, or fluorotelomer (meth)acrylates] were not included in our targeted analysis.

Previous reports on TF in food packaging align well with concentrations reported in our study. Robel et al. measured concentrations from below the LOD to 8.17 $\mu\text{g/cm}^2$, and Schaidler et al. concentrations of ≤ 15.2 $\mu\text{g/cm}^2$ in U.S. fast food packaging.^{13,29} To the best of our knowledge, no prior studies have performed direct quantification of EOF in food packaging. While Robel et al. analyzed TF by PIGE in packaging samples before and after extraction, thereby indirectly measuring EOF, the differences were not statistically significant.²⁹ This is a general problem arising when comparing two large numbers, whereby a small difference easily lies within the error bounds. In our study, that problem is avoided by direct measurement of EOF. Similar to our results, Robel et al. report that the sum of ionic PFASs accounted for only 0–0.03% of the TF.

3.3. Implications. The results of the method comparison revealed excellent agreement among all three total fluorine methods. However, technical differences help determine their

applicability domains. For example, the rapid and non-destructive nature of PIGE and INAA allows for quick screening applications, as for example for regulatory purposes. CIC on the other hand excels at sensitivity and versatility, with lower detection limits and the possibility for direct IC analysis for determination of inorganic fluoride. All three methods can be used to analyze solid and liquid samples, although preconcentration methods are used to increase sensitivity for PIGE, which are not required for INAA and CIC.

In the case of food packaging materials, all three methods prove to be applicable. Because of the limited penetration depth of the particle beam, PIGE can distinguish between coated and uncoated surfaces. Most fluorine was persistent on the paper and paperboards after methanol extractions, as determined by comparably low EOF and target PFAS concentrations. More broadly, the cross-validation of these three TF methods means that they can be used as a complement to high-specificity targeted analysis. The mass balance measurements demonstrated in this work are critical in fate and transport studies of PFASs in the environment, such as those that can be found in the end-of-life options for paper packaging. For example, regardless of whether PFAS-treated paper decays in a landfill, is composted and used as fertilizer, or is recycled directly into more paper, these TF methods can be used to study the environmental release of all PFASs over a broad range of samples, disposal conditions, and locations. Such a broad question could not be answered in a timely manner with compound-specific analysis, yet LC–MS/MS identification of PFASs will remain an essential complement to these robust TF methods.

■ ASSOCIATED CONTENT

● Supporting Information

The Supporting Information is available free of charge on the ACS Publications website at DOI: [10.1021/acs.estlett.8b00700](https://doi.org/10.1021/acs.estlett.8b00700).

Additional information about food packaging samples, instrumental methods, target PFAS compounds, quality assurance and quality control results, *p* values for statistical analysis, and tabular overviews of CIC, PIGE, INAA, and LC–MS/MS results (PDF)

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The authors declare no competing financial interest.

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Supporting information

Total fluorine measurements in food packaging: How do current methods perform?

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Table S1. Food packaging samples, brand names, type and material thickness.

sample ID	brand name	type	thickness (g/cm ²)
FF1	MAX	French Fries Paper Bag	0.00535
FF2	McDonalds	French Fried Cardboard Box	0.02435
FF3	Burger King	French Fries Paper Bag	0.00442
MP1	OLW	Microwave Popcorn Bag	0.00780
MP2	Coop	Microwave Popcorn Bag	0.00783
MP3	Eldorado	Microwave Popcorn Bag	0.00780
MP4	ICA	Microwave Popcorn Bag	0.00784
MP5	McKennedy	Microwave Popcorn Bag	0.00782
MP6	Estrella	Microwave Popcorn Bag	0.00783

Method descriptions

TF and EOF analysis by CIC

Samples (neat material and extracts) were placed onto a ceramic boat which was introduced into a combustion oven (HF-210, Mitsubishi) heated to 1100 °C under an atmosphere of argon and oxygen. All combustion gases were collected in MilliQ water (GA-210, Mitsubishi), and 18 µl were injected onto an anion exchange column (Dionex IonPac AS19 2 × 50 mm guard column and 2 × 250 mm analytical column, 7.5 µm particle size) maintained at 30 °C. The hydroxide mobile phase was ramped from 8 mM to 60 mM at a flow rate of 0.25 ml/min during acquisition time. Method details can be found in Schultes et al. (2018).¹

Quantification was carried out using a linear 10 point calibration curve of sodium fluoride ranging from 5 µg/g to 600 µg/g ($r^2 = 0.9998$). Instrumental blanks and mid-point calibration standards were run intermittently to ensure clean and stable instrumental response over the time of the measurements. The limit of detection (LOD) for TF analysis, which was determined from the average signal obtained from triplicate blank combustions and converted using an average sample amount (2 mg), was calculated as 4.11 µg/g (2.91 µg/dm² for papers and 10.0 µg/dm² for paperboard). The LOD for EOF analysis was based on the average signal of the solvent blanks and amounted to 0.50 µg/ml, and the method detection limit (MDL), based on the extraction blanks (n=3), amounted to 0.68 µg/ml. Using an average sample amount (0.29 g) and extract volume (3.8 ml), these values can be converted to 6.61 and 9.01 µg/g respectively.

TF analysis by PIGE

Method details can be found in Ritter et al. (2017).² Samples were mounted with adhesive tape across a stainless steel target ladder frame with a 1 cm² hole in the middle. PIGE analysis involved bombarding each sample with a 3.4 MeV beam of protons (~50 nA for 180 s) to produce gamma rays, which were measured using a high purity germanium detector (HPGe) (Canberra, 20%) located at approximately 75° to the beam. The beam current was measured before and after each sample measurement and an average was used to estimate the delivered

beam current. Two gamma rays characteristic of the decay of the ^{19}F nucleus at 110 keV and 197 keV were integrated and the total number of counts in these two peaks per μC of beam delivered was proportional to the total fluorine concentration. The detector is calibrated for energy by external gamma-ray sources monthly, and sodium fluoride standards were prepared in mixtures of cellulose nitrate and homogenized for daily calibrations of PIGE signal to TF concentration. The detection limit for this particular PIGE system for TF on paper standards was 0.38 μg . The LOD for F by PIGE in the food packaging material was 0.38 μg . Each peak was numerically integrated above a linear background was fit to four points manually selected about each peak. This linear background was subtracted from the integrated peak counts and statistical counting errors were propagated to assign a statistical uncertainty to each measurement. For the powdered CRM material, replicate targets were prepared by hydraulically compressing the powder into a self-supporting pellet in a pellet press at approximately 350 bar for 30 seconds. These pellets were taped onto target ladders and exposed to beam just as the paper targets were measured.

TF analysis by INAA

Samples were analyzed according to Spate et al. (1994).³ Briefly, samples were weighed into 0.5 mL high density polyethylene (HDPE) vials. The sample mass ranged from 10 mg to 100 mg depending on available sample mass and the level of F and Al in the sample. The vials are encapsulated in HDPE ‘rabbits’ for irradiation in the pneumatic tube irradiation position at the MURR at a neutron flux of $5.5 \times 10^{13} \text{ n/cm}^2/\text{s}$. Samples were irradiated for 7 seconds, decayed for 11 seconds post irradiation, and counted for 30 seconds using an HPGe detector (Canberra, 20%). During neutron irradiation, the ^{19}F captures a neutron, becoming unstable ^{20}F with a 11.03 s half-life. The ^{20}F decays by beta particle emission with a characteristic gamma ray at 1633.6 keV. A correction is made for the fast neutron reaction $^{23}\text{Na}(n,\alpha)^{20}\text{F}$ using a single element Na standard irradiated and counted under the same conditions. The neutron activation product ^{24}Na emits a characteristic gamma ray at 1368.6 keV. The measured ratio of the 1633.6 keV/1368.6 keV gamma ray in the single element standards is used to correct interference in the samples based on the measured 1368.6 KeV gamma ray. The correction in samples analyzed in this study was less than 1%. Six F standards were used for standard comparator analysis. They were prepared from commercial F solutions purchased from High Purity Standards. Because INAA is a non-destructive technique, the samples can be re-analyzed after appropriate decay times.

The calibration standards contained 25 μg of F each and were prepared from a commercial F standard (1000 $\mu\text{g/mL}$ High Purity Standards). The standard was prepared by drying 0.05 g of a 500 $\mu\text{g/mL}$ solution onto filter paper in a HDPE vial. The detection limits for F by INAA are sample matrix and detector dependent. In the current measurements, the detection limits for ^{20}F in popcorn and French fry bags is dependent on Al because the activation of ^{28}Al dominates the gamma ray spectrum. The LOD for food packaging materials in this study was 0.2 μg of F. For a sample with mass 0.01 g, the F detection limit is 20 $\mu\text{g/g}$.

Supplier of reagents

For suppliers of native and mass-labelled PFAS standards, see Table S2. Fluoride standard for CIC calibration (1000 mg/l) was obtained from Thermo Scientific. Argon and oxygen gases (CIC) were of purity grade 5.0. Sodium fluoride for PIGE calibration was obtained from Sigma Aldrich. Fluoride standard for INAA calibration was obtained from High Purity Standards. Certified reference material (BCR-461, Fluorine in clay) was obtained from Sigma-Aldrich. Solvents and reagents used for extraction and analytical procedures: Methanol (LiChrosolv®, Merck), acetonitrile (Chromasolv™, Honeywell), ammonium acetate (Merck), 1-methylpiperidine (Merck), sodium hydroxide (Sigma Aldrich), MilliQ water (TOC = 3 ppb, conductivity = 18.2 MΩ; Millipore, Merck) and Supelclean™ ENVI-Carb™ SPE Bulk Packing (Supelco).

Table S2. Target compounds and internal standards, selected instrumental parameters for quantification by UPLC/MS/MS.

Abbreviation [□]	Precursor Ion	Quantitative Product ion	Qualitative product ion	Internal standard	IS transition	Native standard used for quantification	Data quality*	Supplier [#]
PFBA	213	169	149	¹³ C ₄ -PFBA	217>172	PFBA	1	W
PFPeA	263	219	169	¹³ C ₅ -PFPeA	268>223	PFPeA	1	W
PFHxA	313	269	119	¹³ C ₂ -PFHxA	315>270	PFHxA	1	W
PFHpA	363	319	169	¹³ C ₄ -PFHpA	367>322	PFHpA	1	W
PFOA	413	169	369	¹³ C ₄ -PFOA	417>372	PFOA	1	W
PFNA	463	419	219	¹³ C ₅ -PFNA	468>423	PFNA	1	W
PFDA	513	469	269	¹³ C ₂ -PFDA	515>470	PFDA	1	W
PFUnDA	563	519	269	¹³ C ₂ -PFUnDA	565>520	PFUnDA	1	W
PFDODA	613	569	169	¹³ C ₂ -PFDODA	615>570	PFDODA	1	W
PFTrDA	663	619	169	¹³ C ₂ -PFDODA	615>570	PFDODA	2	W
PFTeDA	713	669	169	¹³ C ₂ -PFDODA	615>570	PFDODA	2	W
PFPeDA	763	719	169	¹³ C ₂ -PFDODA	615>570	PFDODA	2	W
ADONA	377	251	85	¹³ C ₄ -PFOA	417>372	ADONA	2	W
9Cl-PF3ONS	531	351	83	¹³ C ₄ -PFOS	503>80	9Cl-PF3ONS	2	W
11Cl-PF3OUdS	631	451	83	¹³ C ₄ -PFOS	503>80	11Cl-PF3OUdS	2	W
PFBS	299	80	99	¹⁸ O ₂ -PFHxS	403>84	PFBS	2	W
PFHxS	399	80	99	¹⁸ O ₂ -PFHxS	403>84	PFHxS	1	W
PFOS	499	99	80	¹³ C ₄ -PFOS	503>80	PFOS	1	W
PFDS	599	80	99	¹³ C ₄ -PFOS	503>80	PFDS	2	W
FOSA	498	78	478	¹³ C ₈ -FOSA	506>78	FOSA	1	W
4:2 FTSA	327	307	81	¹³ C ₂ -6:2 FTSA	429>409	4:2 FTSA	2	W
6:2 FTSA	427	407	81	¹³ C ₂ -6:2 FTSA	429>409	6:2 FTSA	1	W
8:2 FTSA	527	507	81	¹³ C ₂ -6:2 FTSA	429>409	8:2 FTSA	2	W
FOSAA	556	498	419	D ₃ -MeFOSAA	573>419	FOSAA	2	W
Me-FOSAA	570	419	483	D ₃ -MeFOSAA	573>419	Me-FOSAA	1	W
Et-FOSAA	584	419	486	D ₃ -MeFOSAA	573>419	Et-FOSAA	1	W
FPrPA	241	117	177	¹³ C ₅ -PFPeA	268>223	FPrPA	2	W
FPePA	341	237	217	¹³ C ₄ -PFHpA	367>322	FPePA	2	W
PHpPA	441	337	148	¹³ C ₅ -PFNA	468>423	PHpPA	2	W
4:2 monoPAP	343	97	323	¹³ C ₂ -6:2 monoPAP	445>97	4:2 monoPAP	2	D
6:2 monoPAP	443	97	423	¹³ C ₂ -6:2 monoPAP	445>97	6:2 monoPAP	1	W
8:2 monoPAP	543	97	523	¹³ C ₂ -8:2 monoPAP	545>97	8:2 monoPAP	1	W
10:2 monoPAP	643	97	623	¹³ C ₂ -8:2 monoPAP	545>97	10:2 monoPAP	2	C
4:2/4:2 diPAP	589	343	97	¹³ C ₄ -6:2/6:2 diPAP	793>445	4:2/4:2 diPAP	2	D

4:2/6:2 diPAP	689	443	343	¹³ C ₄ -6:2/6:2 diPAP	793>445	6:2/6:2 diPAP	3	
6:2/6:2 diPAP	789	443	97	¹³ C ₄ -6:2/6:2 diPAP	793>445	6:2/6:2 diPAP	1	W
6:2/8:2 diPAP	889	443	543	¹³ C ₄ -6:2/6:2 diPAP	793>445	6:2/8:2 diPAP	2	W
8:2/8:2 diPAP	989	543	97	¹³ C ₄ -8:2/8:2 diPAP	993>545	8:2/8:2 diPAP	1	W
6:2/10:2 diPAP	989	443	643	¹³ C ₄ -8:2/8:2 diPAP	993>545	8:2/8:2 diPAP	3	
8:2/10:2 diPAP	1089	543	643	¹³ C ₄ -8:2/8:2 diPAP	993>545	8:2/8:2 diPAP	3	
6:2/12:2 diPAP	1089	443	743	¹³ C ₄ -8:2/8:2 diPAP	993>545	8:2/8:2 diPAP	3	
10:2/10:2 diPAP	1189	643	97	¹³ C ₄ -8:2/8:2 diPAP	993>545	8:2/8:2 diPAP	3	
8:2/12:2 diPAP	1189	543	743	¹³ C ₄ -8:2/8:2 diPAP	993>545	8:2/8:2 diPAP	3	
6:2/14:2 diPAP	1189	443	843	¹³ C ₄ -8:2/8:2 diPAP	993>545	8:2/8:2 diPAP	3	
M8PFOS	421	376	-	-	-	-	-	W
M8PFOA	507	80	-	-	-	-	-	W

□ For full chemical names refer to Buck et al⁴

* 1 = native standard and exact matched mass labelled standard, 2 = native standard but no exact matched mass labelled standard, 3 = no native standard, no exact matched mass labelled standard

W = Wellington Laboratories (Guelph, ON, Canada), C = Chiron Chemicals (Hawthorn, VIC, Australia), D = Donated by Dr. Xenia Trier (National Food Institute, Denmark)

Table S3. Replicate CIC and PIGE measurements of CRM, mean and standard deviation (certified concentration $\pm$ uncertainty = $568 \pm 60 \mu\text{g/g}$)

	CIC ($\mu\text{g/g}$)	PIGE ($\mu\text{g/g}$)
R1	575.6	558.8
R2	547.2	581.4
R3	538.5	590.0
R4	548.9	517.8
R5	571.2	625.8
R6	569.3	530.4
R7	566.0	614.0
R8	569.7	499.5
Mean	560.8	564.7
sd	13.8	45.9

Table S4. Results (replicate samples, means and standard deviation) of PFOA-spiked filters by CIC, PIGE and INAA.

	theoretical value (µg)	CIC (µg)					PIGE (µg)					INAA (µg)				
		R1	R2	R3	mean	sd	R1	R2	R3	mean	sd	R1	R2	R3	mean	sd
Filter A	0	<LOD	<LOD	<LOD	-	-	<LOD	<LOD	<LOD	-	-	<LOD	<LOD	<LOD	-	-
Filter B	1.9	2.08	1.98	1.85	1.97	0.120	1.69	0.81	1.02	1.17	0.460	2.10	2.10	2.05	2.08	0.033
Filter C	3.8	3.24	3.39	3.86	3.50	0.322	3.17	4.15	3.64	3.65	0.490	3.35	3.50	3.69	3.51	0.170
Filter D	9.5	10.06	8.59	9.85	9.50	0.795	9.74	10.80	11.03	10.52	0.688	8.41	9.25	8.25	8.64	0.539
Filter E	19.1	20.79	16.98	17.16	18.31	2.15	19.94	20.63	19.07	19.88	0.782	17.12	17.12	17.24	17.16	0.071
Filter F	38.2	34.20	34.21	32.48	33.63	0.995	35.95	37.86	36.84	36.88	0.956	32.82	33.03	34.86	33.57	1.12

Table S5. Total fluorine concentrations of food packaging samples (replicate samples for CIC, replicate measurements for PIGE and INAA).

	CIC (µg/g)					PIGE (µg/g)					INAA (µg/g)				
	R1	R2	R3	mean	sd	R1	R2	R3	mean	sd	R1	R2	R3	mean	sd
FF1	713.0	765.6	777.8	752.2	34.5	675	753	669	699	46.9	885	803	835	841	41.4
FF2 (entire sample)	719.7	700.1	773.7	731.2	38.1						912	999	929	947	46.0
FF2 (red side)						3955	4302	4006	4088	187.4					
FF2 (white side)						211	-	-	-	-					
FF3	444.2	459.4	489.6	464.4	23.1	467	339	366	391	67.5	383	378	365	375	9.4
MP1	558.8	525.7	519.4	534.6	21.1	539	512	544	532	17.2	470	471	476	472	3.4
MP2	1326.5	1290.5	1411.6	1342.9	62.2	1319	1286	1289	1298	18.2	1369	1303	1302	1325	38.3
MP3	393.5	406.5	406.4	402.1	7.5	398	426	415	413	14.1	399	375	384	386	11.9
MP4	582.0	546.1	527.0	551.7	27.9	594	596	550	580	26.0	470	471	500	480	17.1
MP5	1683.2	1656.3	1609.0	1649.5	37.6	1594	1461	1626	1560	87.5	1703	1629	1664	1665	36.9
MP6	533.2	588.6	502.3	541.4	43.7	479	541	491	504	32.9	479	465	444	463	17.7

Table S6. Results of individual, repeated t-tests assuming unequal variance for PFOA-spiked filter

Concentration level of filter [μg PFOA]	p-value		
	CIC vs PIGE	CIC vs NAA	PIGE vs NAA
1.9	0.087	0.238	0.075
3.8	0.677	0.959	0.674
9.5	0.17	0.202	0.022
19.1	0.334	0.452	0.026
38.2	0.015	0.946	0.018

Table S7. Average recoveries from spike-recovery experiments and CV.

Compound	average recovery	CV
PFBA	86%	8%
PFPeA	79%	14%
PFHxA	81%	12%
PFHpA	91%	5%
PFBS	86%	11%
PFHxS	87%	6%
PFOA	60%	5%
PFNA	80%	13%
FOSA	83%	4%
PFOS	67%	17%
PFDA	77%	4%
PFUnDA	83%	8%
PFDS	73%	11%
PFDoDA	93%	28%
PFTTrDA	100%	28%
PFTeDA	82%	29%
FPrPA	63%	8%
FPePA	70%	16%
FHpPA	64%	14%
ADONA*	55%	4%
9Cl-PF3ONS	66%	15%
11Cl-PF3OUdS	68%	18%
MeFOSAA	70%	15%
EtFOSAA	73%	3%
4:2 FTSA	88%	37%
6:2 FTSA	83%	31%
8:2 FTSA	61%	43%
4:2 monoPAP*	134%	10%
6:2 monoPAP	89%	4%
8:2 monoPAP	94%	17%
10:2 monoPAP*	280%	25%
4:2 diPAP*	47%	8%
6:2 diPAP	75%	2%
8:2 diPAP	98%	9%
6:2/8:2 diPAP	82%	3%
10:2 diPAP*	39%	34%

*data for those substances should be considered semi-quantitative due to high/low recovery.

Table S8. Target PFAS concentrations in food packaging samples (pg/cm²)

[illegible]

Table S9. Fluorine mass balance in food packaging materials.

sample ID	TF ($\mu\text{g}/\text{cm}^2$)		EOF ($\mu\text{g}/\text{cm}^2$)		$C_{F_ΣPFAS}$	EOF/TF	$C_{F_ΣPFAS} / \text{EOF}$	$C_{F_ΣPFAS} / \text{TF}$
	mean	sd	mean	sd	$\mu\text{g}/\text{cm}^2$			
FF1	4.02	0.18	0.22	0.0012	1.427E-05	5.47%	0.0065%	0.0004%
FF2	17.80	0.93	0.44	0.13	0.0002048	2.49%	0.046%	0.0012%
FF3	2.05	0.10	<0.04		1.933E-05	-	-	0.0009%
MP1	4.17	0.16	<0.07		4.006E-05	-	-	0.0010%
MP2	10.51	0.49	0.34	0.043	1.455E-05	3.22%	0.0043%	0.0001%
MP3	3.14	0.06	<0.07		4.698E-05	-	-	0.0015%
MP4	4.33	0.22	<0.07		3.886E-05	-	-	0.0009%
MP5	13.06	0.15	0.49	0.056	0.0013853	3.76%	0.28%	0.0107%
MP6	4.24	0.34	<0.07		6.633E-05	-	-	0.0016%

References

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- (2) Ritter, E. E.; Dickinson, M. E.; Harron, J. P.; Lunderberg, D. M.; DeYoung, P. A.; Robel, A. E.; Field, J. A.; Peaslee, G. F. PIGE as a Screening Tool for Per- and Polyfluorinated Substances in Papers and Textiles. *Nucl. Instruments Methods Phys. Res. Sect. B Beam Interact. with Mater. Atoms* **2017**, *407*, 47–54.
- (3) Spate, V. L.; Morris, J. S.; Baskett, C. K.; Mason, M. M.; Reams, C. L.; Hunter, D.; Willett, W. C. Determination of Fluoride in Human Nails via Cyclic Instrumental Neutron Activation Analysis. *J. Radioanal. Nucl. Chem. Artic.* **1994**, *179* (1), 27–33.
- (4) Buck, R. C.; Franklin, J.; Berger, U.; Conder, J. M.; Cousins, I. T.; Voogt, P. De; Jensen, A. A.; Kannan, K.; Mabury, S. A.; van Leeuwen, S. P. J. Perfluoroalkyl and Polyfluoroalkyl Substances in the Environment: Terminology, Classification, and Origins. *Integr. Environ. Assess. Manag.* **2011**, *7* (4), 513–541.



**Board of Health
TOWN OF NEEDHAM
AGENDA FACT SHEET**



MEETING DATE: 11/08/2019

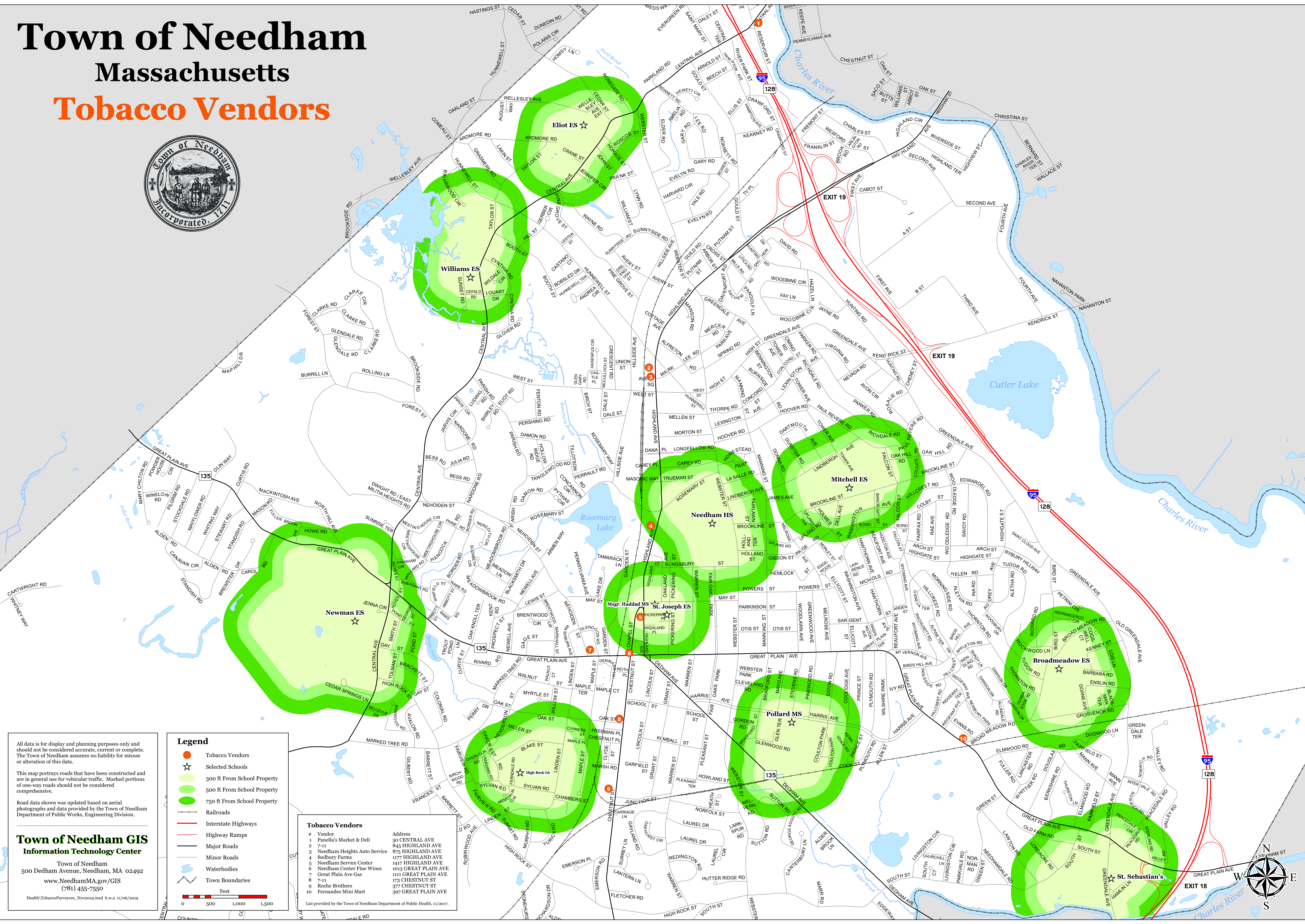
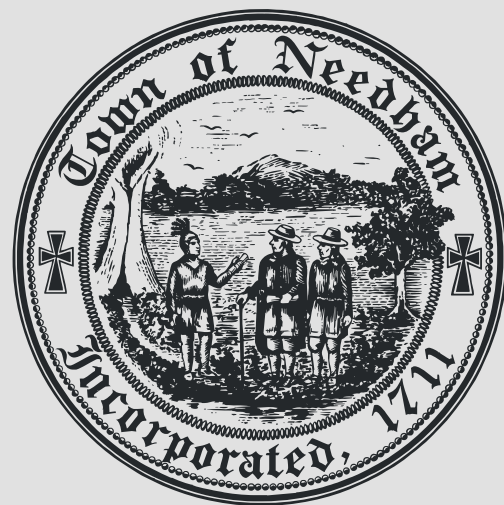
Agenda Item	Youth Tobacco and Vape Use in Needham; Open Board Discussion of Tobacco Vendor Density
Presenter(s)	Timothy Muir McDonald, Director of Health & Human Services Tara Gurge, Assistant Public Health Director

1.	BRIEF DESCRIPTION OF TOPIC TO BE DISCUSSED
The Board of Health will review its existing tobacco vendors and their locations, discuss youth use of tobacco and e-cigarettes, and discuss the use of regulations and the number and location of tobacco vendors as ways in which to combat tobacco and e-cigarette use in the community.	
2.	VOTE REQUIRED BY BOARD OF HEALTH
No vote is required.	
3.	BACK UP INFORMATION ATTACHED
The enclosed packet includes a map of Needham's existing tobacco vendors and their proximity to schools, along with a series of data slides from the 2018 MetroWest Adolescent Health Survey, and a series of articles and letters about vaping use and regulation from the November issue of the <i>American Journal of Public Health</i>.	

Town of Needham

Massachusetts

Tobacco Vendors



All data is for display and planning purposes only and should not be considered accurate, current or complete. The Town of Needham assumes no liability for misuse or alteration of this data.

This map portrays roads that have been constructed and are in general use for vehicular traffic. Marked portions of one-way roads should not be considered comprehensive.

Road data shown was updated based on aerial photographs and data provided by the Town of Needham Department of Public Works, Engineering Division.

Town of Needham GIS Information Technology Center

Town of Needham
500 Dedham Avenue, Needham, MA 02492
www.NeedhamMA.gov/GIS
(781) 455-7550

Health\TobaccoParveyors_Nov2019.mxd h.w.a 11/06/2019

Legend

- Tobacco Vendors
- Selected Schools
- 300 ft From School Property
- 500 ft From School Property
- 750 ft From School Property
- Railroads
- Interstate Highways
- Highway Ramps
- Major Roads
- Minor Roads
- Waterbodies
- Town Boundaries

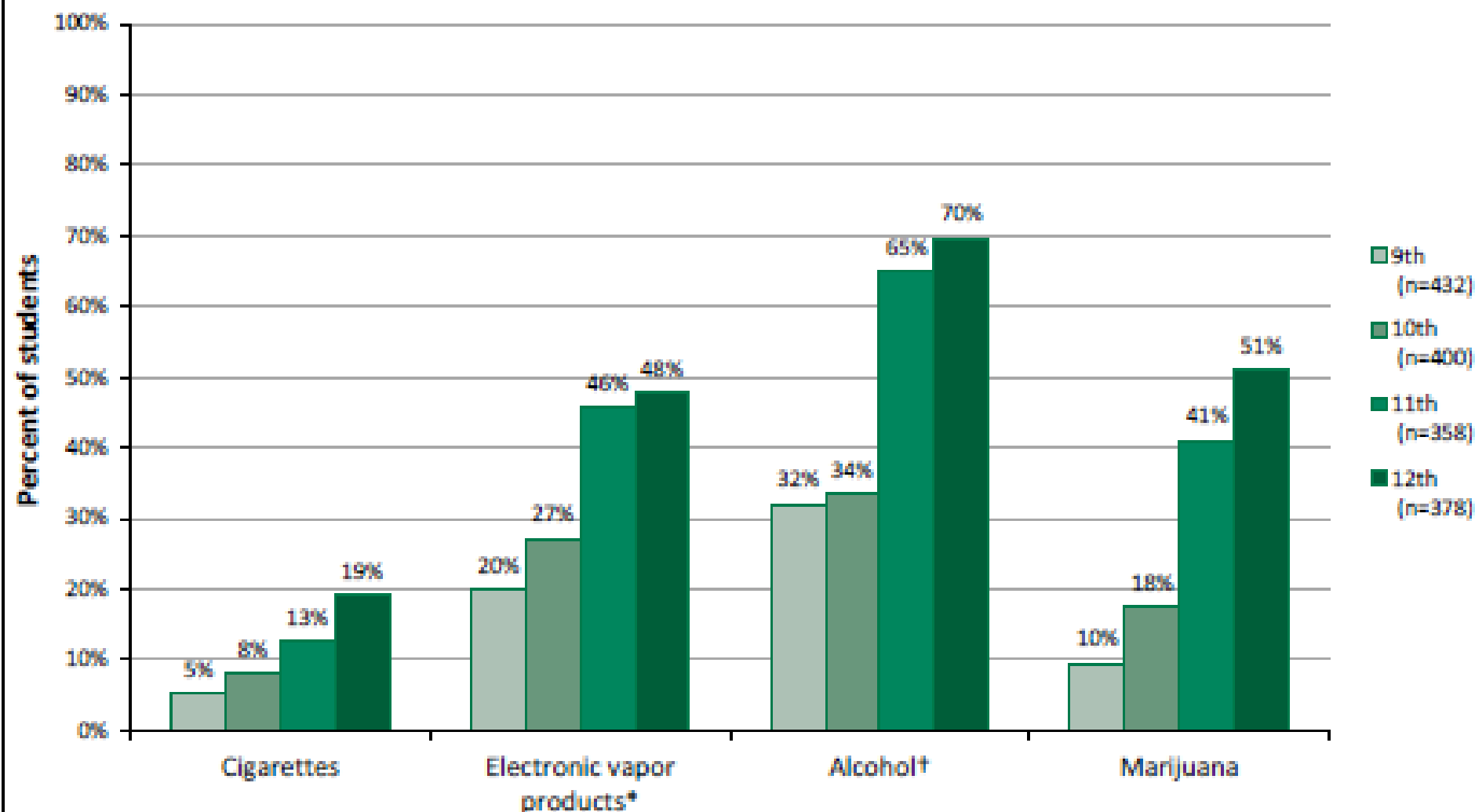
0 500 1,000 1,500 Feet

Tobacco Vendors

#	Vendor	Address
1	Panella's Market & Deli	50 CENTRAL AVE
2	7-11	845 HIGHLAND AVE
3	Needham Heights Auto Service	875 HIGHLAND AVE
4	Sudbury Farms	1177 HIGHLAND AVE
5	Needham Service Center	1417 HIGHLAND AVE
6	Needham Center Fine Wines	1013 GREAT PLAIN AVE
7	Great Plain Ave Gas	1111 GREAT PLAIN AVE
8	7-11	173 CHESTNUT ST
9	Roche Brothers	377 CHESTNUT ST
10	Fernandes Mini Mart	397 GREAT PLAIN AVE

List provided by the Town of Needham Department of Public Health, 11/2017.

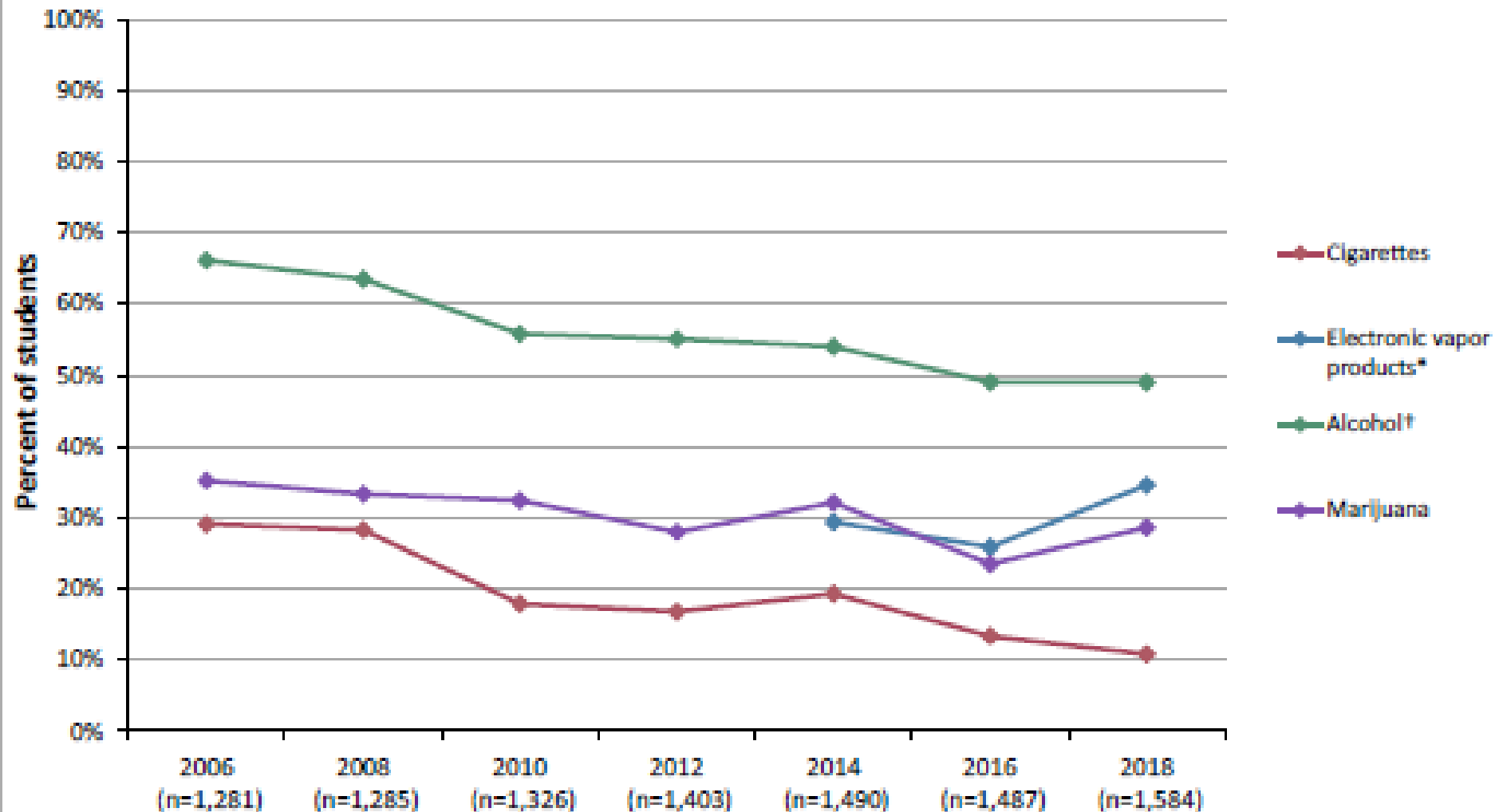
Figure 2-1B. Lifetime Substance Use by Grade, 2018
Needham High School (Grades 9-12)
MetroWest Adolescent Health Survey



* Includes electronic cigarettes like JUUL, Phix, Vuse, MarkTen, and blu, and other electronic vapor products, like vapes, vape pens, e-cigars, e-hookahs, hookah pens, and mods

† Does not include drinking a few sips of wine for religious purposes

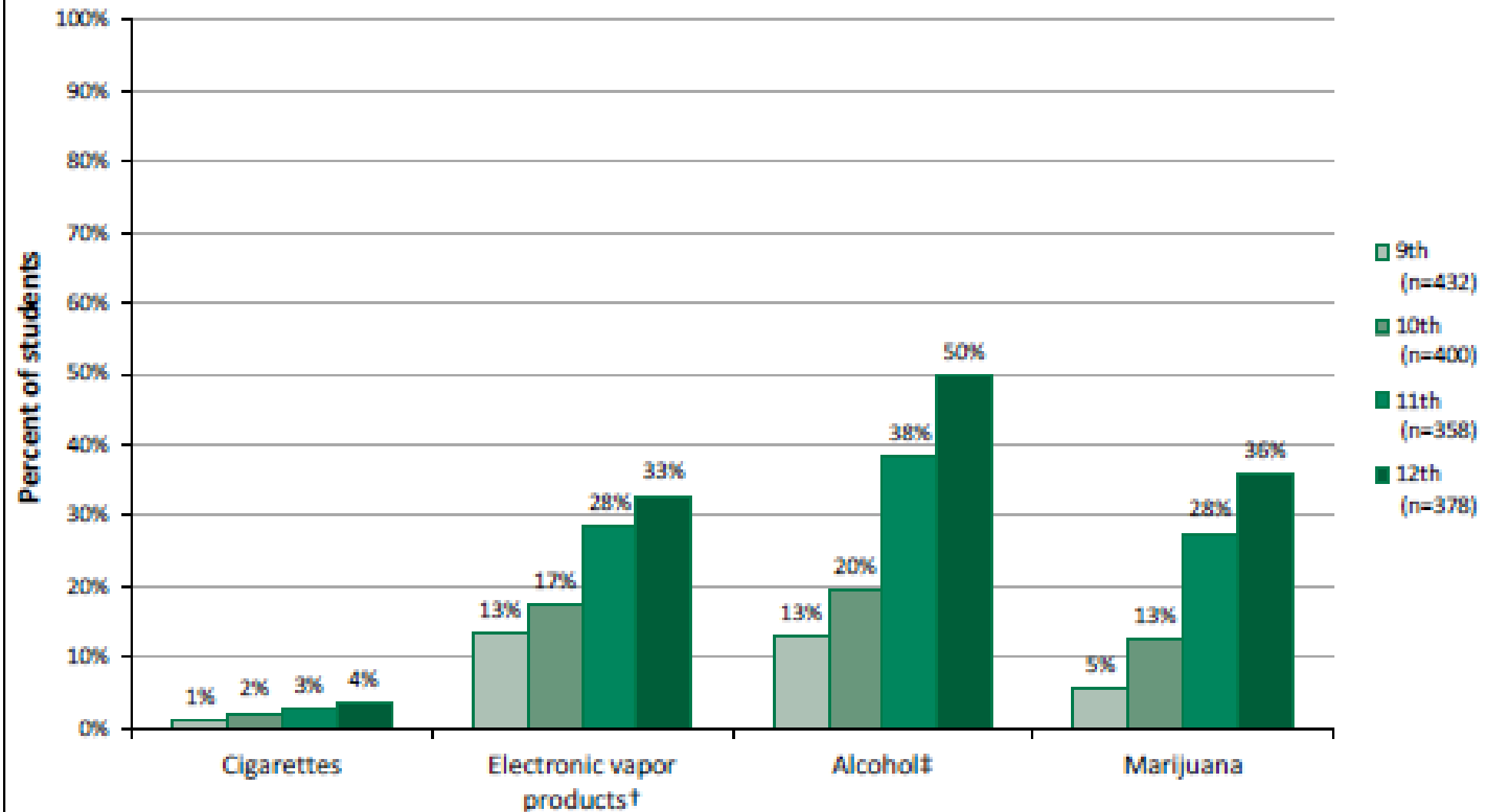
Figure 2-1C. Trends in Lifetime Substance Use, 2006-2018
Needham High School (Grades 9-12)
MetroWest Adolescent Health Survey



* Includes electronic cigarettes like JUUL, Phlo, Vuse, MarkTen, and blu, and other electronic vapor products, like vapes, vape pens, e-cigs, e-hookahs, hookah pens, and mods

† Does not include drinking a few sips of wine for religious purposes

Figure 2-3B. Current Substance Use* by Grade, 2018
Needham High School (Grades 9-12)
MetroWest Adolescent Health Survey

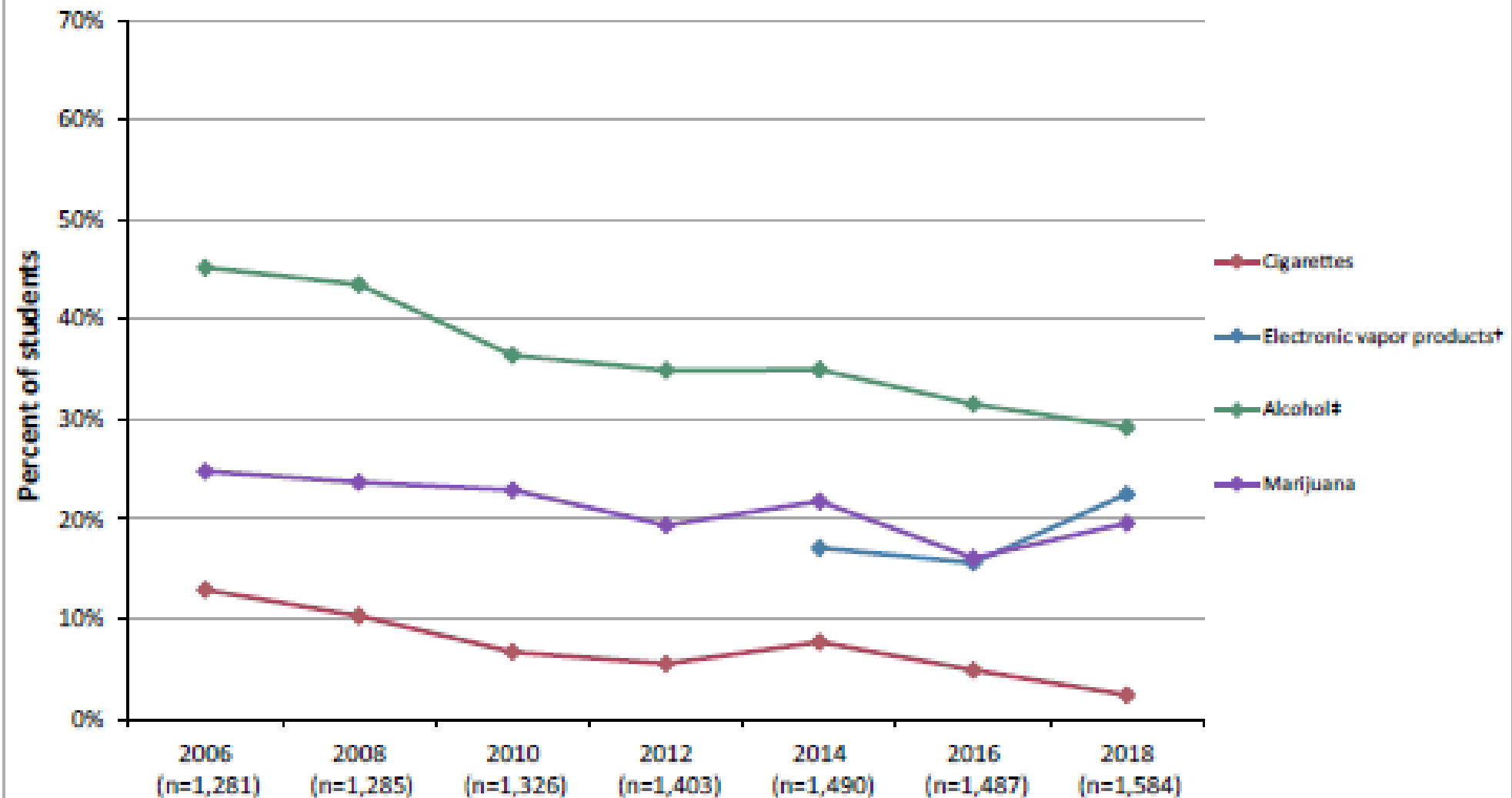


* Used one or more times in the past 30 days

† Includes electronic cigarettes like JUUL, Phix, Vuse, MarkTen, and blu, and other electronic vapor products, like vapes, vape pens, e-cigars, e-hookahs, hookah pens, and mods

‡ Does not include drinking a few sips of wine for religious purposes

Figure 2-3C. Trends in Current Substance Use,* 2006-2018
Needham High School (Grades 9-12)
MetroWest Adolescent Health Survey

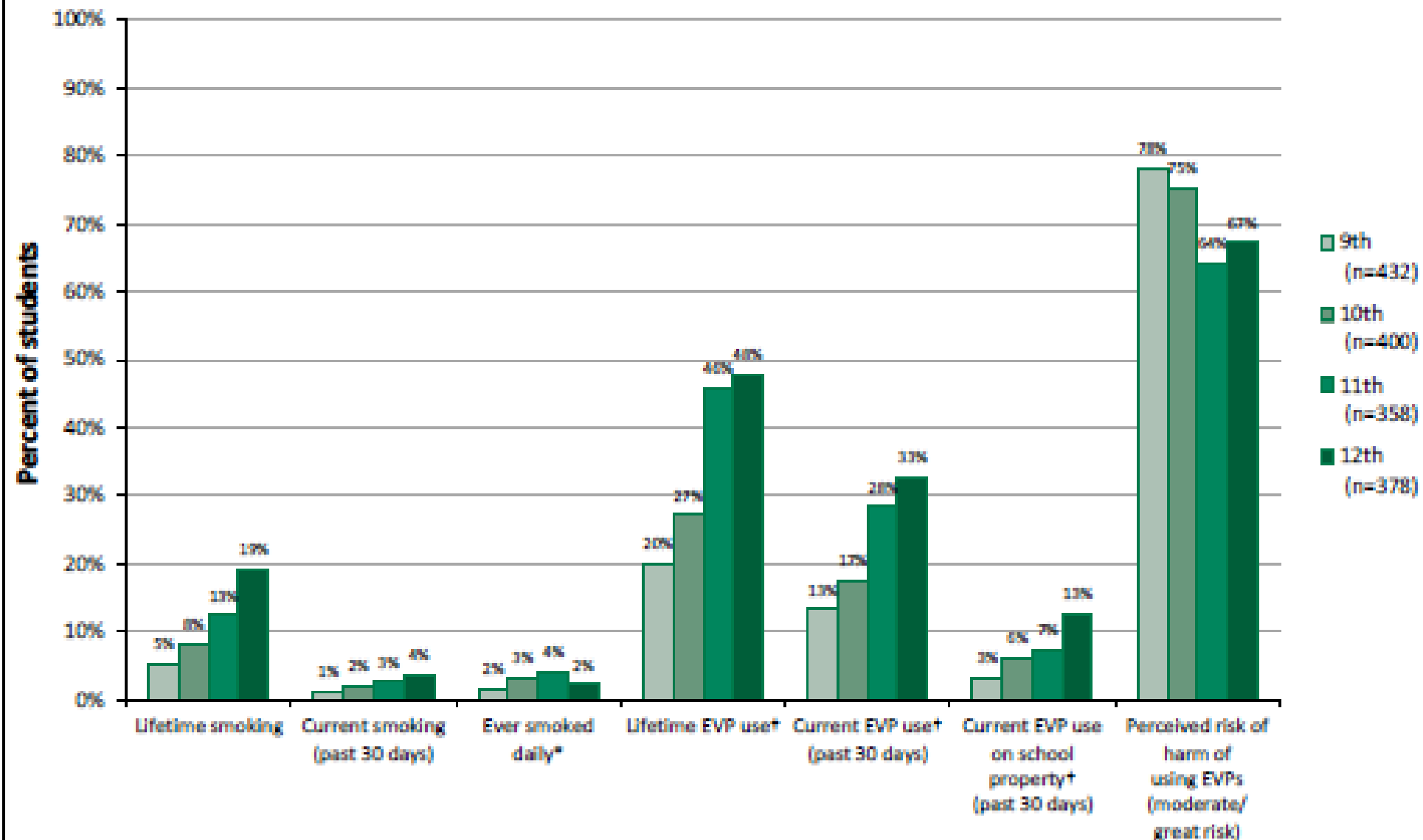


* Used one or more times in the past 30 days

† Includes electronic cigarettes like JUUL, Phlo, Vuse, MarkTen, and blu, and other electronic vapor products, like vapes, vape pens, e-cigars, e-hookahs, hookah pens, and mods

‡ Does not include drinking a few sips of wine for religious purposes

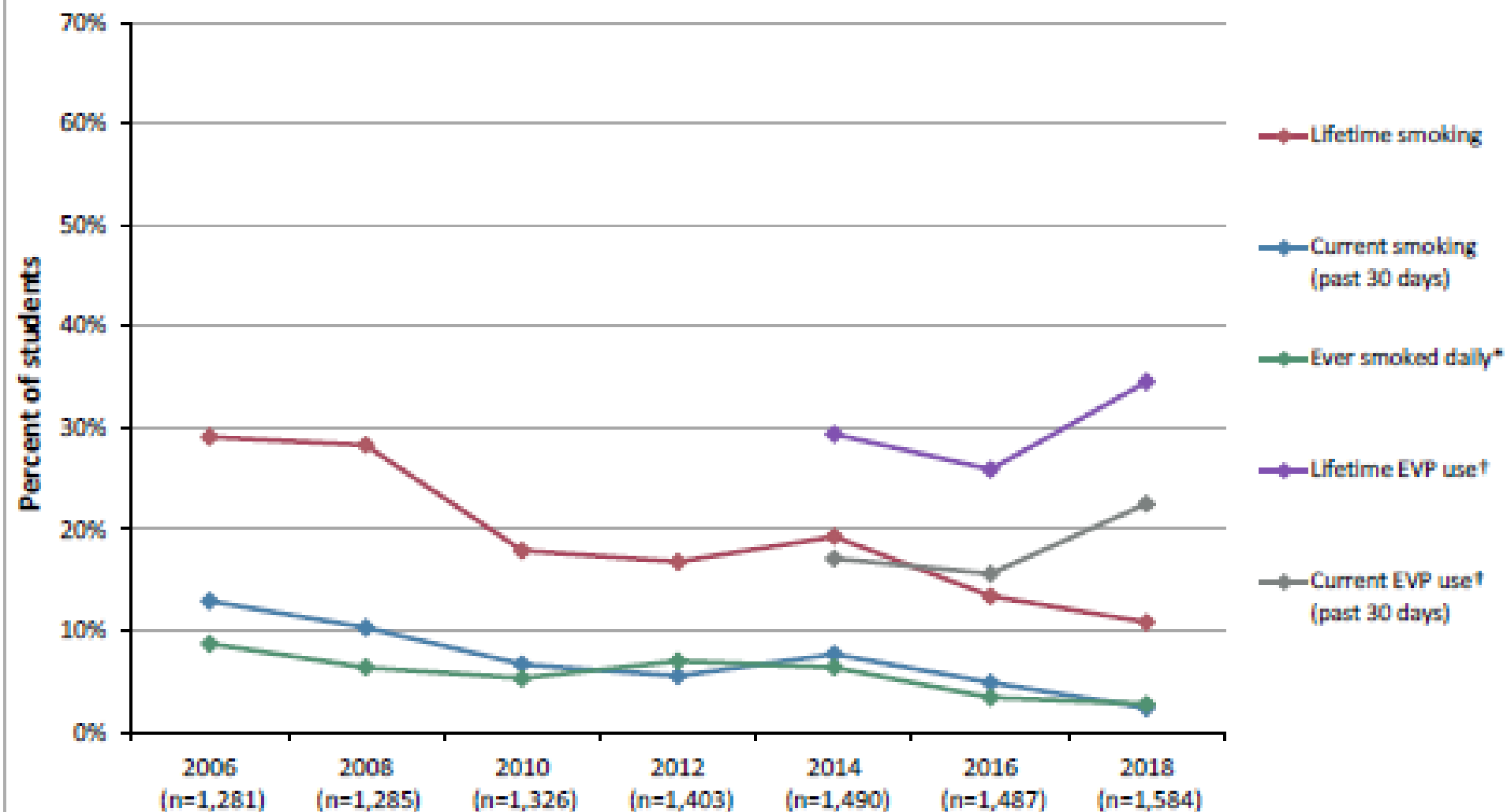
Figure 2-4B. Tobacco and Electronic Vapor Product Use by Grade, 2018
Needham High School (Grades 9-12)
MetroWest Adolescent Health Survey



* Every day for 30 days

† Includes electronic cigarettes like JUUL, Phix, Vuse, MarkTen, and blu, and other electronic vapor products, like vapes, vape pens, e-cigars, e-hookahs, hookah pens, and mods

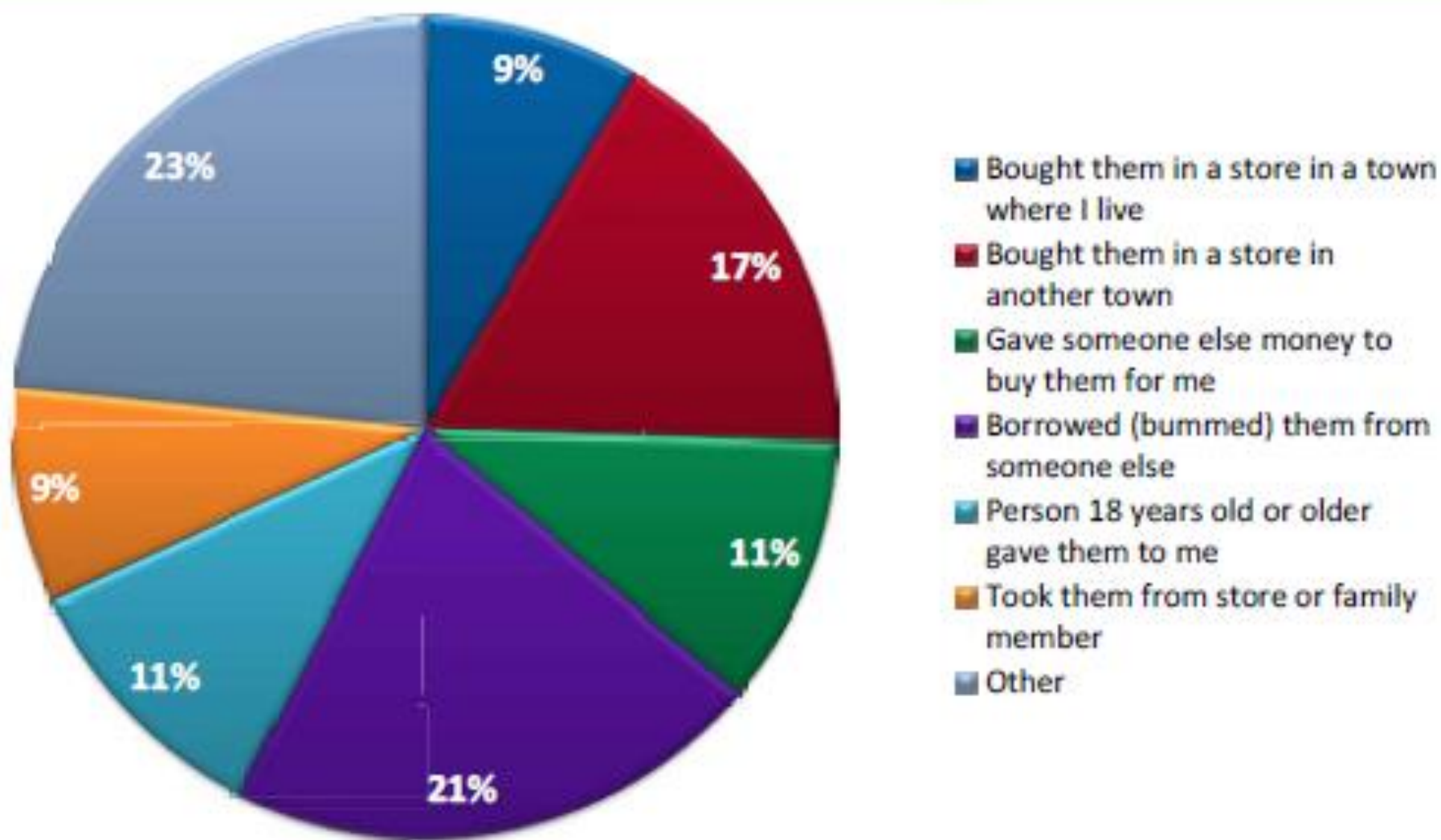
Figure 2-4C. Trends in Tobacco and Electronic Vapor Product Use, 2006-2018
Needham High School (Grades 9-12)
MetroWest Adolescent Health Survey



* Every day for 30 days

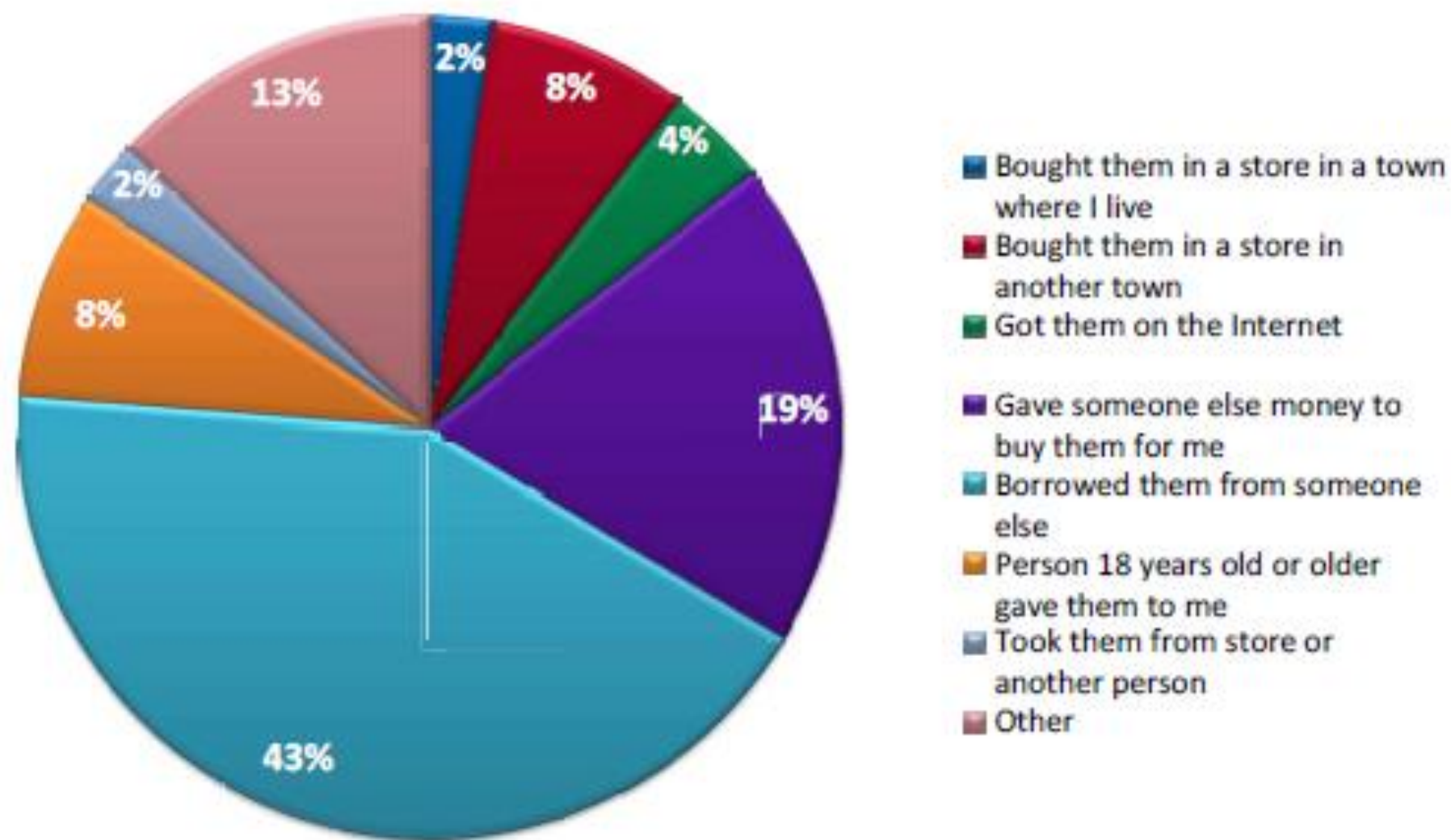
† Includes electronic cigarettes like JUUL, Phlo, Vuse, MarkTen, and blu, and other electronic vapor products, like vapes, vape pens, e-cigars, e-hookahs, hookah pens, and mods

Figure 2-5. Access to Cigarettes,* 2018
Needham High School (Grades 9-12)
MetroWest Adolescent Health Survey



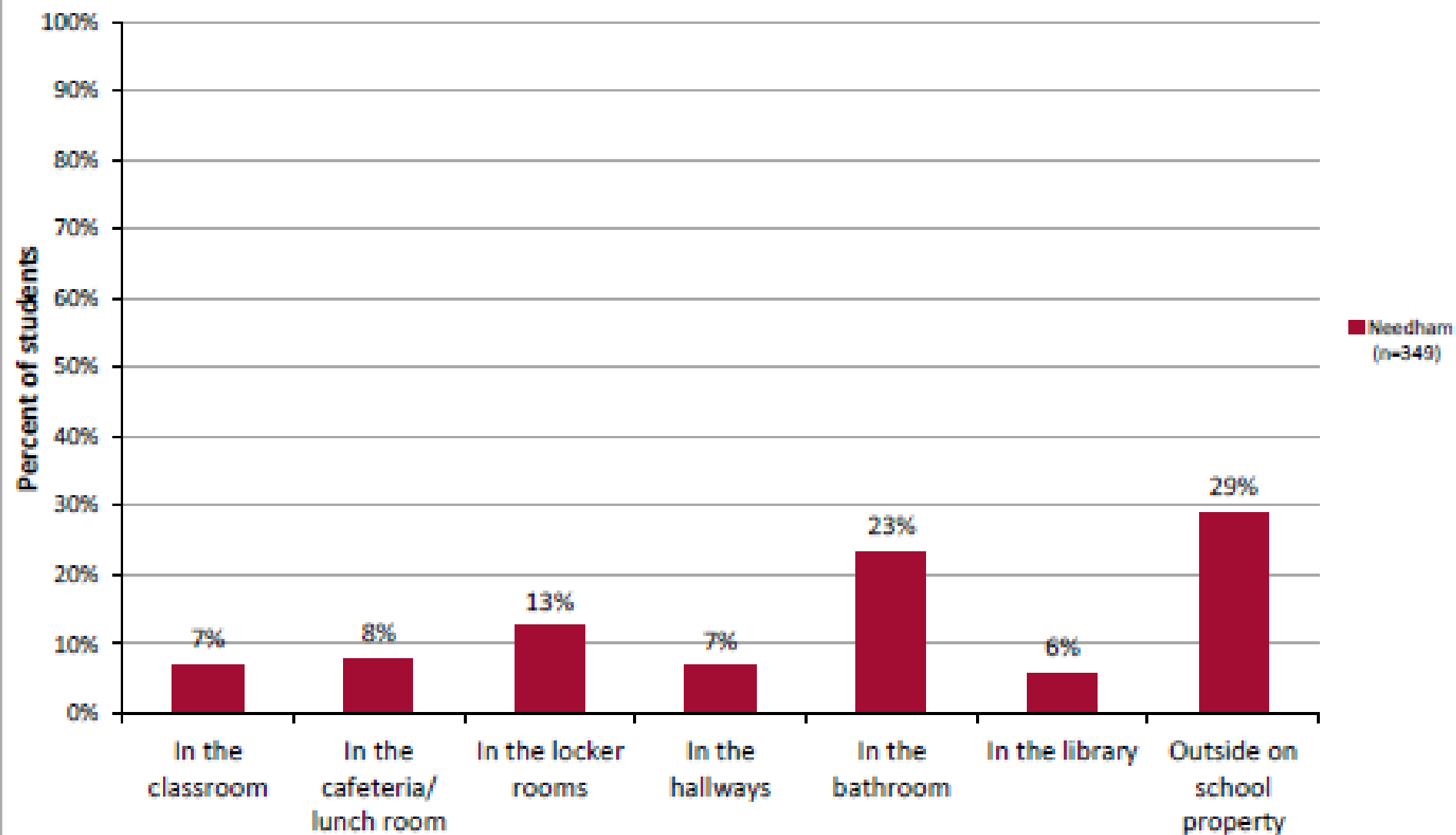
* Source where student "usually" got cigarettes, among students who smoked in the past 30 days

Figure 2-6. Access to Electronic Vapor Products,* 2018
Needham High School (Grades 9-12)
MetroWest Adolescent Health Survey



* Source where student "usually" got electronic vapor products, among students who used them in the past 30 days

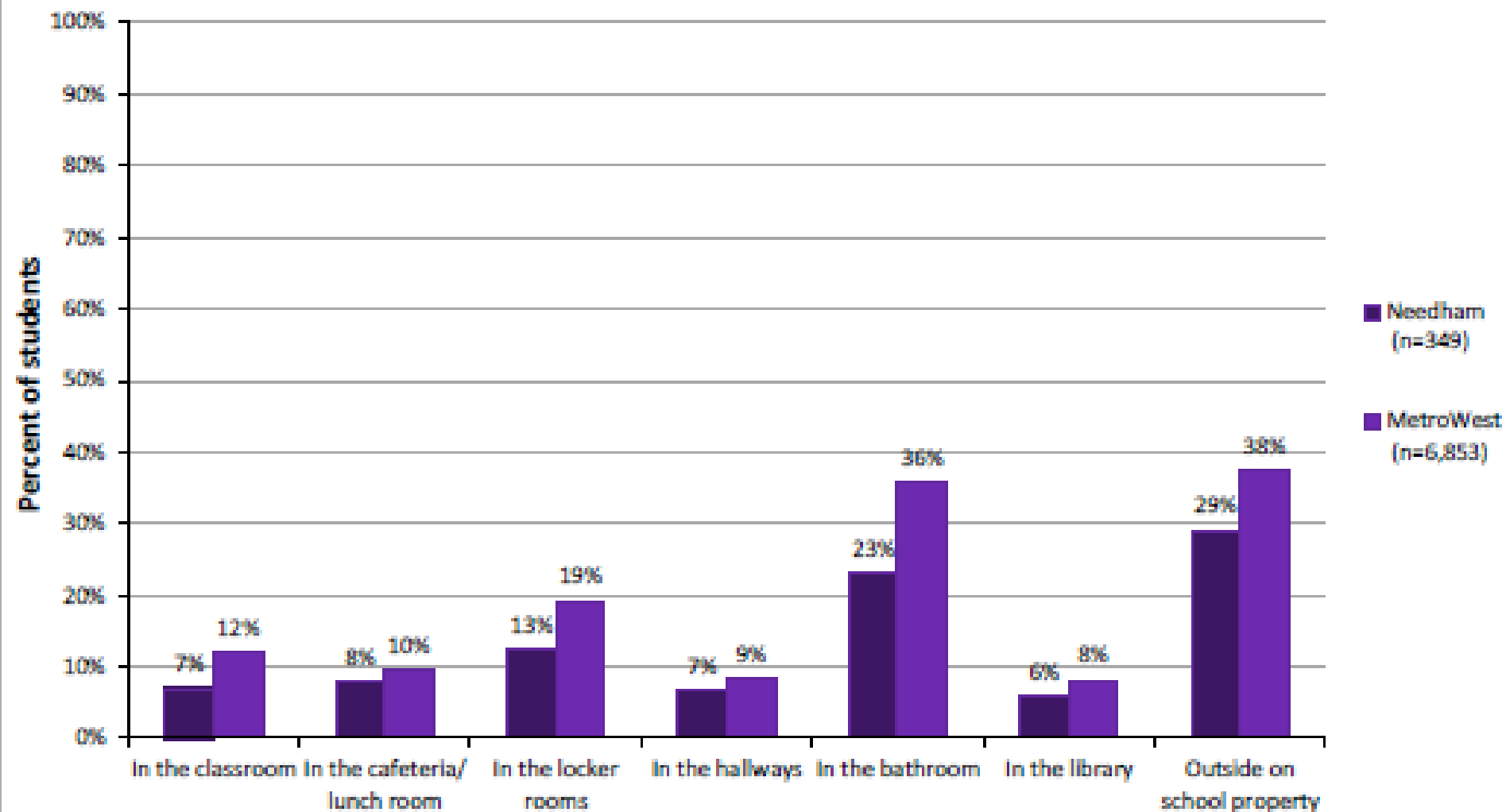
Figure 2-7C. Trends in Locations of Electronic Vapor Product Use on School Property,* 2018
Needham High School (Grades 9-12)
MetroWest Adolescent Health Survey



* Among students who used electronic vapor products in the past 30 days

Figure 2-7D. Locations of Electronic Vapor Product Use on School Property* at the District and Regional Levels, 2018

Needham High School (Grades 9-12)
MetroWest Adolescent Health Survey



* Among students who used electronic vapor products in the past 30 days

Electronic Nicotine Delivery Systems: Recommendations to Regulate Their Use

Since 2014, electronic nicotine delivery systems (ENDS) have become the most commonly used tobacco products among high-school and middle-school students in the United States.¹ According to Fairchild et al.,² the US Food and Drug Administration (FDA) and Public Health England (PHE) have taken different policy responses to ENDS. While the FDA has focused on protecting youths, PHE has prioritized ENDS for smoking cessation among current smokers. In 2016, the FDA passed the “Deeming Regulations” to protect youths from initiation and exposure to ENDS but postponed implementation until 2022, which has created a regulatory vacuum and a critical need for policy action. The American Public Health Association’s (APHA’s) recent policy statement supports the protection of youths by restricting their access to ENDS and including these products in existing and new tobacco control policies.

In the United States, 20.8% and 7.2% of high-school and middle-school students, respectively, reported that they had used e-cigarettes in the past 30 days in 2018.¹ The latest generation of e-cigarette products, disposable pod devices recognized by their sleek, flash drive-shaped appearance, are believed to have contributed to the rise in adolescent ENDS use. One of the most popular brands, JUUL, accounted for more than two thirds of the share of the e-cigarettes market by December 2018.³ IQOS and other HeatStick

products, approved by the FDA in April 2019, are feared to further exacerbate the ENDS epidemic among youths.

Fairchild et al.² compared reports by the National Academies of Science, Engineering, and Medicine (NASEM) and PHE regarding e-cigarettes. They indicated that the fundamental difference in the FDA’s and PHE’s approaches is between the populations they seek to protect—youths and young adults versus current smokers, respectively. In addition, they argue that the NASEM’s report focuses on the investigation of causality while the PHE’s focused on “relevant and meaningful” findings. We disagree; we believe the FDA’s approach protects smokers from dual use of both cigarettes and e-cigarettes and promotes scientifically proven cessation methods. We believe the FDA seeks to protect tobacco users, nonusers, and vulnerable populations, including youths, those living with mental illnesses, pregnant women, and minorities, by providing a comprehensive approach to tobacco control. Others have since drawn attention to the bias within PHE’s report and implications for health of the United Kingdom.⁴ While we agree with issues raised by McKee in his critique, including the inherent bias of the tobacco industry-friendly report that has informed such an approach,⁴ in our article, we seek to address health concerns and policy implications within the United States only.

Usage rates of ENDS in the United States are highest among

young adults aged 18 to 24 years, with a growing rate among those with no history of tobacco use.⁵ Evidence indicates that ENDS contribute to the growing rate of nicotine initiation, usage of conventional cigarettes, and addiction among populations who may not have otherwise become tobacco users.⁵ This trend could undermine the public health gains of the past half century, including the hard-won reductions in tobacco-related morbidity and mortality.⁵ Current projections predict more lives will be lost through ENDS as a gateway to cigarettes than saved from those who quit smoking because of ENDS. This net public health harm, especially among youths and young adults, provides sufficient rationale for strict and immediate regulation of these products.^{4,5}

A growing body of evidence has demonstrated both the immediate and long-term damage caused by the use of and exposure to ENDS, such as potential damage to neurons in the prefrontal cortex and reduction in cell size or quantity within the cerebral cortex and hippocampus.⁵ In addition, ENDS have been associated with damage to endothelial function, arterial stiffness, and increased risk

of myocardial infarctions among daily ENDS users.⁶ Moreover, ENDS aerosols have been linked with respiratory illnesses such as asthma and bronchiolitis obliterans (commonly known as popcorn lungs), caused by a flavoring chemical (diacetyl) found in the majority of e-cigarette flavors tested.⁵ Nicotine solutions may also pose an added public health hazard that can lead to accidental poisoning, particularly for infants and young children.⁵

Thus, while we agree with Fairchild et al. that risk should be appropriately represented,² we reinstate their conclusion that uncertainty remains about how much safer e-cigarettes are when compared with combustible products. We, therefore, disagree that health educators should provide youths and young adults, or any population, with suggestions about the differences between the risks associated with ENDS use and cigarette use. We recommend education to focus on absolute harm of ENDS rather than relative harm compared with conventional cigarettes. To only educate about relative harm would disregard the immediate and long-term health effects associated with using ENDS.

Some suggest that ENDS contain lower levels of carcinogens and toxicants than combustible tobacco products, and those who switch from smoking to ENDS will likely experience health benefits.⁵ A recent randomized study found ENDS

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RECOMMENDED REGULATORY POLICIES FOR ELECTRONIC NICOTINE DELIVERY SYSTEMS

Federal Actions

Require childproof packaging and warning labels on e-cigarettes and nicotine solution cartridges.

Prohibit flavored ENDS, including menthol.

Prohibit Internet distribution of ENDS through the US Postal Service.

Extend the restrictions on advertising, marketing, and promotions of tobacco to ENDS.

Increase the prices of ENDS by limiting rebates, discounts, and coupons, including taxes concurrent with tobacco products.

Fund research regarding the short- and long-term health consequences of ENDS and their efficiency as a smoking cessation strategy.

State and Local Actions

Prohibit the use of ENDS in all enclosed areas of public access and places of employment.

Remove preemption laws to allow localities to regulate the sale, distribution, and use of ENDS and e-cigarettes.

Extend a tax on e-cigarettes, similar to the tax on other tobacco products.

Raise the minimum legal sales age of ENDS to 21 years.

Implement community educational programs targeted toward youths and young adults, parents, and pregnant women regarding the dangers of nicotine exposure.

Note. ENDS = electronic nicotine delivery systems.

to be more effective than nicotine-replacement therapy (NRT) products for smoking cessation among current smokers.⁷ Although this study found a significantly higher smoking cessation rate among the e-cigarette group (18.0%) compared with the NRT group (9.9%), it simultaneously found that 80% of participants randomized to e-cigarettes were still using e-cigarettes at the 1-year follow-up, compared with 9% for those assigned to NRT. Moreover, limitations of the study included a bias sample who expressed interest in quitting cigarettes and insufficient time to determine relapse to conventional cigarettes. More research is needed regarding the health risks or benefits of ENDS as cessation devices—especially in comparison with conventional FDA-approved NRTs, bupropion, or varenicline that have

been found to have similar or even higher rates of smoking cessation.

The future of tobacco regulation in the United States is uncertain because of the recent resignation of FDA Commissioner Scott Gottlieb. As such, APHA's 2018 policy statement regarding the regulation of ENDS recommends the adoption of a comprehensive approach to protect youths, young adults, and innocent bystanders from exposure to ENDS through evidence-based strategies, such as federal, state, and local policies (see the box on this page). The FDA is encouraged to adopt practices for ENDS found to reduce tobacco use over the past decade such as increasing ENDS retail prices; limiting rebates, discounts, and coupons; imposing a tax on ENDS; and increasing the minimum legal sales age of tobacco products (including ENDS) to 21 years. Because of weak age-verification practices of online sales,

new policy strategies are needed to eliminate online sale of nicotine products such as ENDS. Furthermore, raising the minimum legal sales age of all tobacco products, including ENDS, to 21 years is believed to decrease smoking rates and delay initiation of tobacco products among high-school students. Thus, strong legislation, with evidence-based enforcement measures, should be included in all policies pertaining to ENDS.

Literature suggests that ENDS are creating a gateway to the use of conventional cigarettes among youths and young adults; thus, ENDS appear to be contributing to an increase in lives lost (because of tobacco initiation) at a greater rate than they serve as a vehicle for older adults to switch from traditional cigarettes to ENDS. APHA, therefore, urges immediate action to further regulate ENDS products on the federal, state, and local levels. As

indicated in the 2018 APHA policy statement regarding the regulation of ENDS, stricter policies pertaining to ENDS could help to prevent or reduce nicotine initiation and addiction. Ultimately, public health gains should not be lost to the newest tobacco marketing strategy or product. **AJPH**

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All of the authors contributed to the original writing and revision of the final article.

CONFLICTS OF INTEREST

There is nothing to declare.

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AJPH LETTERS AND RESPONSES

E-CIGARETTES AND THE DANGER THEY POSE TO SOCIETY

The article “The E-Cigarette Debate: What Counts as Evidence?” by Fairchild et al.¹ makes for an interesting read. Smoking is widely known to cause respiratory problems and cancer. As is well known, tobacco smoking cessation cannot be achieved immediately; it is gradual and might call for the intermediate use of tobacco alternatives such as e-cigarettes—the main components of which are nicotine and flavors. With this letter to the editor, I aspire to seal the cracks I found in the reviewed article.

The Food and Drug Administration is facilitating campaigns against e-cigarettes using graphic imagery to display the health effects vaping has on the lungs and other parts of the human body. A problem arises when Public Health of England and the US National Academies of Science, Engineering, and Medicine engage in what could be defined as a contest that identifies the advantages of e-cigarettes over smoking. Whereas the Food and Drug Administration is attempting to shield nonsmokers from trying vaping, Public Health of England recommends e-cigarettes as an alternative to smoking. According to recent

studies by Notley et al.,² vaping, although less harmful than smoking, does not offer useful insights on how to cleanse the body of chemicals inhaled from the two items. Notley et al. explain that both smoking and vaping lead to nicotine poisoning. Nicotine poisoning can cause high blood pressure, skin-related problems, and addictions. By relying on such facts, the article could have been more persuasive if insights from Public Health of England concerning e-cigarettes were given less attention.

The United States is leading the world in protecting innocent bystanders, including children, from the secondhand effects of vaping and smoking. It drafted smoking policies that safeguarded nonsmokers even before the evidence on passive smoking was analyzed. Thus, it is unfortunate that Public Health of England finds no problem in the use of e-cigarettes even when bystanders are involved.

I personally agree that vaping is safer than smoking. However, both means of seeking pleasure are not recommendable. Switching from one form of cigarette to another does not assist in improving one's health. Instead, quitting entails completely avoiding nicotine consumption. Although e-cigarette vapor contains far fewer toxic ingredients than does cigarette smoke, we must not forget that nicotine is still addictive and harmful. According to some users, e-cigarette use may cause dry mouth, sore throat, and dizziness. Vaping and smoking are both dangerous to one's health. **AJPH**

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E-CIGARETTE REGULATION IN THE UNITED STATES AND THE UNITED KINGDOM: TWO COUNTRIES DIVIDED BY A COMMON LANGUAGE

We welcome the *AJPH* essay by Fairchild et al.¹ attempting to understand differences between e-cigarette reviews published in the United States and England in early 2018.^{2,3} As authors and commissioners of the Public Health England (PHE) reports,^{3–5} we would like to clarify and correct some issues. Perhaps in the future, such efforts could benefit from interviews with those involved in the reports, particularly when the authors are based in the United States.

Fairchild et al.¹ state that PHE “published its own reviews.” However, PHE commissions academics to write independent reviews. The statement, “Their current commitment is not to determine whether to recommend e-cigarettes. They already do,”^(p1004) is too simplistic. Our conclusions and recommendations were more nuanced, highlighting benefits of switching for existing smokers only. Similarly, “whether to retreat from an established policy position because of new evidence”^(p1004) implies a distortion of the principles of scientific inquiry, which is to assess how new evidence changes existing understanding.

We question the validity of the following statement: “England is in fact a global outlier on the question of e-cigarettes.”^{1(p1000)} Consistent with other European Union member states, the United Kingdom has strict regulations for e-cigarettes. We would argue that Australia, by prohibiting the sale of nicotine e-cigarettes, and the United States, by currently having no regulatory standards and few marketing restrictions, are more appropriately labeled outliers.

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The authors reported allegations that “funds from the tobacco industry tainted the English conviction that people ‘smoke for the nicotine but die from the tar.’”^{1(p1000)} These allegations have been strongly refuted,⁶ and the fact that nicotine drives smoking behavior is a fact, not a conviction. Calling PHE’s “risk assessment . . . an unwarranted overstatement based on limited evidence and conflicts of interest”^{1(p1002)} wrongly implies that we have such conflicts. Our risk assessment was similar to that of the Royal College of Physicians.⁷

Dockrell was quoted as calling for “shared lounges for vapers in hospitals,” a subject not covered in our reports. When asked by the press about a UK hospital’s designated vaping areas, Dockrell said that such a policy was reasonable. McNeill’s quote about nicotine¹ was from 2015, not 2018, but we contend that researchers should remain unswayed in the face of apprehension, being swayed only by new evidence. Bauld did not state that the effect of e-cigarettes on youths was “negligible,” instead saying that “regular use of e-cigarettes among young people who have never smoked remains negligible.”¹

We think it is not surprising that reports commissioned for different purposes by different bodies in different countries should differ. That the reports found common ground on the relative harm of e-cigarettes and combustible tobacco cigarettes is therefore noteworthy. **AJPH**

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All authors contributed to the drafting of the letter and approved final content.

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FAIRCHILD AND BAYER RESPOND

On July 10, 2019, the *New York Times* reported that two hospitals in Birmingham, England, had opened the way for an e-cigarette company to create vaping shops on their premises.¹ This move occurred as the hospitals acted to ban all smoking of combustible tobacco cigarettes in and around their buildings.

A month earlier, although combustible tobacco products can be legally sold, the board of supervisors in San Francisco, California, voted unanimously to ban the sale and distribution of e-cigarettes in the city.² The enforcement of the ban would begin in early 2020. Two weeks later, the state of Vermont announced that it would increase taxes on e-cigarettes, thereby eliminating any price advantage of e-cigarettes over those that burned tobacco. In so doing, Vermont rejected analyses that differential taxation could be used as a way of nudging smokers toward a far safer form of nicotine consumption.³

These developments throw into sharp relief the radical distinction that has separated the politics of e-cigarettes and harm reduction in the United States and England. These fundamentally different approaches set the stage for understanding our effort to analyze two important reports from Public Health England and the US National Academies of Science, Engineering, and Medicine (NASEM) in early 2018. We described and explained how it was possible, considering the common evidentiary base, for two very different policy frames to emerge and, as a consequence, two different perspectives on what counted as evidence. Both reports used systematic review techniques. But for Public Health England, current smokers were the population of fundamental concern. For the United States, it was nonsmokers, children and adolescents, and “innocent” bystanders that helped to prioritize the more limited clinical trial evidence and discount ecological studies.

The editorial by McKee⁴ that accompanied the publication of our *AJPH* article provided a full-throated rejection of the embrace of e-cigarettes by Public Health England. In their letter, Newton and Dockrell described the McKee editorial as “a poorly evidenced account.” Their letter, which is a critique of McKee,⁴ can only be viewed as part of the ongoing debate even within England.

Considering this conflict, it is surprising that McNeill et al., in their letter, challenge our effort to underscore the importance of the radical distinction between the approach taken by Public Health England and that taken by state, local, and national public health officials in the United States. The critiques of Public Health England by others were mistakenly attributed to us. But even more surprising was the challenge to our characterization of England being an outlier because of its efforts not only to accept but also to promote the use of e-cigarettes by current smokers. We did not suggest that England had pressed the limits of evidence-based policy by adopting a posture that made it a standout among nations; rather, it represented a rejection of the more common deep concern and skepticism that, even within the United Kingdom, commonly characterizes the

response to e-cigarettes. An outlier can be at the vanguard, but it is never the norm.

Although the United Kingdom may represent one end of the spectrum when it comes to uncertainty about e-cigarettes, there has been less controversy about the risks of nicotine to adults. Indeed, the public health community has long been tolerant of even lifelong use of nicotine replacement therapy in the form of nicotine gum and the patch.⁵

Mensah's letter in this issue of *AJPH* underscores the ways in which, as debate about evidence and e-cigarettes progresses, nicotine is increasingly described as a threat to both users and bystanders. NASEM noted that "using e-cigarettes in indoor environment may involuntarily expose non-users to nicotine and particulates."^{6(p622)} NASEM did little to differentiate the risk of secondhand exposure to nicotine and other e-cigarette particulates. Most important, NASEM made a point to underscore that it had not undertaken a systematic review of nicotine. Most intriguing, despite the hyperbolic rhetoric when it comes to nicotine and youths in its public service announcements, the US Food and Drug Administration remains open to nicotine delivery as harm reduction.

In 2017, Scott Gottlieb, then US Food and Drug Administration Commissioner, and Mitchell Zeller, the US Food and Drug Administration's Director of the Center for Tobacco Products, described the "foundational" role that nicotine must play in ending the scourge of combustible tobacco smoking: "The regulatory framework for reducing harm from tobacco must include nicotine—the chemical responsible for addiction to tobacco products—as a centerpiece. Nicotine, though not benign, is not directly responsible for the tobacco-caused cancer, lung disease, and heart disease that kill hundreds of thousands of Americans each year."^{7(p1112)} It is, they argued, not nicotine but "other chemical compounds in tobacco, and in the smoke created by combustion, [that] are primarily to blame for such health harms."⁶ The current state of evidence, long reliance on nicotine replacement therapy, and ongoing support for nicotine delivered in nonlethal forms do not support Mensah's argument that nicotine poisoning is a credible risk at the population level for vapers, smokers, or bystanders.

Vigorous, evidence-informed debate is not enhanced by focusing too narrowly on the fact that there is common ground, regardless of whether that common ground relates to the relative harms of either e-cigarettes or nicotine. Common ground can be a basis for pragmatic policy momentum. But common ground also can mask profound and important differences. Exploring those differences underscores what is at stake and begins to explain values, priorities, and commitments that give evidence value in different social and political contexts. *AJPH*

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CONTINUING BURDEN OF TOBACCO-RELATED HARM: E-CIGARETTE POLICY IN ENGLAND IS EVIDENCE BASED AND NOT EXCEPTIONAL

The continuing burden of tobacco-related harm worldwide requires action in relation to e-cigarettes despite imperfect evidence.¹ England has been carefully developing and implementing an evidence-based approach to e-cigarettes for several years. It was disappointing, therefore, to see a poorly evidenced account of this work in a recent editorial by McKee.²

The article³ that prompted the editorial is an interesting attempt to analyze two different reviews of a similar evidence base. Those involved in the English review by McNeill et al. have identified some inaccuracies in the account by US authors. The accompanying editorial,² however, adds more significant layers of confusion by making unjustified observations about policymaking in England, greatly exaggerating the extent to which England is an outlier in relation to e-cigarettes, and misquoting a Public Health England (PHE) spokesman.

Tobacco policy in England is developed formally and set out by the government in its Tobacco Control Plan.⁴ E-cigarette policy is informed by the conclusions of a series of published evidence reviews commissioned from leading academics, not based on the opinion of a few individuals as implied in the editorial.

The overall claim of "English exceptionalism" fundamentally misrepresents the international position in relation to e-cigarettes. The United Kingdom's strict regulations on e-cigarettes are, for example, very similar to those in all other European Union countries. Among countries with active tobacco control strategies, it is Australia (where the sale of nicotine-containing e-cigarettes is prohibited) and the United States (with no specific regulatory standards and few marketing restrictions in place on e-cigarettes) that now may be considered outliers. England was arguably ahead of other jurisdictions in implementing a harm reduction policy in relation to e-cigarettes,⁵ but countries like Canada, New Zealand, and France are now

adopting very similar approaches. Some such as New Zealand go at least as far as England in promoting e-cigarettes as a cessation aid.⁶

In the editorial, McKee states that PHE “takes a view that is so much at odds with those in the rest of the world” but fails to identify those views in any detail or show how they differ from the international consensus. PHE has always been clear that e-cigarettes are not risk free but are a fraction of the risk of smoking tobacco. True, PHE is more positive about the role of e-cigarettes for smoking cessation than are the US National Academies of Sciences, Engineering, and Medicine (NASEM),⁷ which saw the evidence as unclear, but England is by no means alone in this view, and evidence available after the NASEM review closed provides further support.⁸ The other major point of difference might be on attitudes toward use of e-cigarettes by young people, but those differences are not unreasonable given the different patterns of youth vaping in the United Kingdom and the United States and recent evidence of differential uptake of new products.⁹ Rates of regular e-cigarette use in young people remain low in the United Kingdom, and smoking rates among young people continue to decline.¹⁰ The editorial states that in the United Kingdom, there is “evidence already of an increase in adolescent e-cigarette use,” whereas, in fact, rates of ever vaping in youths have not increased in the United Kingdom in the last three years.¹¹ The editorial has an important misquote of evidence to an Australian parliamentary inquiry.¹² The published Hansard record is “We say what really matters is the evidence underlying this figure from the Nutt report.” In other words, we are not so interested in the Nutt report but in the underlying evidence on the likely relative hazard. The text given, however, is “the evidence underlying this figure came from the Nutt report,” which implies the opposite. Misleading claims about PHE’s reliance on the methodology of the Nutt report and the claim that they are 95% safer than conventional cigarettes persist despite this having been addressed many times, including almost four years ago by the lead academic authors of the PHE commissioned report.¹³

Veiled references to the role of the tobacco industry repeated again in this editorial are especially egregious and have already been squarely rebutted by the relevant authors.¹⁴

It may strike readers that the concept of “sunk cost fallacy” could apply to both sides of this debate. Some commentators have an overriding concern about future risks for which no hard evidence yet exists, whereas others are persuaded to act by the extant and emerging evidence of contemporary benefit. Maybe the sky is falling (or will fall in the future), or maybe it won’t. In the meantime, we have an epidemic of tobacco-related harm to address as best we can with the tools currently available. **AJPH**

John N. Newton, FFPH, FRCP
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CONTRIBUTORS

J. N. Newton wrote the first draft of the letter. M. Dockrell commented on subsequent drafts and provided additional references.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to disclose.

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MCKEE RESPONDS

Not for the first time, I am afraid that I must disagree with many of the points that Newton and Dockrell make. They challenge my argument that England is an outlier with regard to e-cigarettes and suggest that it is in the vanguard of a global movement. Yet San Francisco, California, has banned sales of e-cigarettes, and the recently appointed acting commissioner of the US Food and Drug Administration has said that “we are working as hard and expeditiously as possible to protect the public’s health from the harms associated with e-cigarette use” (<http://bit.ly/31TN8zO>). Elsewhere, Hong Kong and Singapore have joined the growing list of countries, including Brazil, Egypt, Thailand, and Uruguay, where



**Board of Health
TOWN OF NEEDHAM
AGENDA FACT SHEET**



MEETING DATE: 11/08/2019

Agenda Item	Discussion of Governor's Fourth Month Ban on Vape Products
Presenter(s)	Timothy Muir McDonald, Director of Health & Human Services Tara Gurge, Assistant Public Health Director

1.	BRIEF DESCRIPTION OF TOPIC TO BE DISCUSSED
Discussion of Gov. Baker's order to ban sale of e-cigarettes/vapes in MA and the recent legal developments in that case. Discussion of Needham Board of Health policy on use of vaping and steps to reduce youth use. Review of draft letter from BOH to community about youth vaping.	
2.	VOTE REQUIRED
None.	
3.	BACK UP INFORMATION ATTACHED
A packet of information is attached, including the Governor's Declaration of Emergency, the Commissioner of Public Health's Order, an Implementation Order, and a Guidance Document for Local Boards of Health. The front of the packet has been updated with recent Boston Globe articles about the emergency ban.	

Ban on medical marijuana vapes to end unless cannabis commission votes to keep it, judge rules

By Naomi Martin Globe Staff, November 5, 2019, 11:18 a.m.

Governor Charlie Baker's ban on medical marijuana vaping products will end next week unless the state Cannabis Control Commission votes to keep it in place, a state judge ruled Tuesday.

The ruling does not apply to the ban on nicotine or recreational marijuana vapes.

State lawmakers clearly wanted the cannabis commission to oversee the medical marijuana industry and prioritize access for patients, Suffolk Superior Court Judge Douglas H. Wilkins ruled. He added that the ban on medical cannabis vapes could cause "irreparable harm" to patients who rely on vaping products to treat severe pain and other conditions, and could lead them to use opioids or illicit drugs.

To avoid disrupting the market, Wilkins allowed Baker's ban on medical marijuana vapes to remain in effect until noon on Nov. 12, giving the cannabis commission until then to decide whether to adopt emergency regulations similar to the ban, in whole or in part, to change them, or to decline to enact a ban at all.

Baker plans to appeal the ruling, a spokesman said, noting that the ruling has no immediate effect.

The ban on both marijuana and nicotine vaping product sales has been in effect since Sept. 24, when Baker announced a public health emergency amid a

national outbreak of vaping-related lung illnesses that have [killed at least 37](#) and [sickened more than 1,800 people](#).

Baker said at the time the four-month ban was necessary to give investigators time to pinpoint the cause of the ailments.

Since the announcement, federal officials have said the evidence increasingly points to most of the illnesses being linked to illicit-market marijuana products; however some patients reported vaping only nicotine.

Two women [have died](#) in Massachusetts, and health officials said they both vaped only nicotine. Another 217 suspected cases of vaping-related lung injuries have been reported to the state, said Terry MacCormack, a Baker spokesman.

MacCormack said federal investigators have warned that no “single substance or product” has been linked to all the illnesses or deaths, and the authorities have “urged consumers to stop vaping, as medical experts continue to research what is making people sick.”

The judge’s ruling Tuesday was the latest in a lawsuit originally filed by nicotine vaping companies against Baker’s ban.

Wilkins previously ruled that Baker did not follow the correct procedure in implementing the ban without first holding public hearings, analyzing the effect on small businesses, and formally implementing it as a regulation.

The administration appealed that ruling and filed the ban as an emergency regulation, setting a public hearing for Nov. 22.

The judge also allowed four medical marijuana patients to be included in the lawsuit. The Supreme Judicial Court [announced this week](#) it would hear arguments related to the ban in December.

In his ruling Tuesday, Wilkins wrote that, based on state laws, Baker’s Department of Public Health “very likely exceeded its authority.”

The Legislature granted the cannabis commission “exclusive powers over medical marijuana,” and defined the Department of Public Health’s role as to “work collaboratively” and in “an advisory role,” Wilkins wrote.

The commission did not immediately comment, saying it was reviewing the ruling. Neither did the Department of Public Health.

One of the [patients involved in the lawsuit](#), cannabis advocate and lawyer Will Luzier, praised the judge's ruling.

"We believe the judge made the correct decision," said Luzier, who said he relies on marijuana vaping products to relieve his arthritis and ocular hypertension. "The governor's administration overstepped their mandate," he said, adding that the 2016 ballot initiative suggested vaping products should be available for sale, which was "an expression of the will of the people."

Luzier said recreational marijuana should also fall under the cannabis commission's purview, though the lawsuit and the judge's ruling have not addressed access to non-medical marijuana.

In his ruling, Wilkins also noted that lawmakers set up the cannabis commission to be independent from the governor. Lawmakers placed the laws about the commission under the section of state law involving the state treasurer, not the governor, Wilkins wrote, and granted the governor sole appointing authority over just one of the five cannabis commissioners. The rest of the commissioners are appointed through votes that include the treasurer and the attorney general.

The Department of Public Health is "asserting the power to commandeer the [Cannabis Control Commission] to implement DPH's vision of medical marijuana regulation despite CCC's exclusive authority over that subject," he wrote. "That squarely violates [state law]."

Additionally, Wilkins wrote, the Legislature ordered "all" power over medical marijuana to be transferred from the Department of Public Health to the cannabis commission, a change that occurred last December.

"The obvious purpose of the transfer of 'all' power over medical marijuana was to change the inputs into decision-making in this area," Wilkins wrote, so that "medical marijuana regulation would reflect broader representation of affected communities and individuals."

"The conflict with the legislative scheme could not be clearer," Wilkins wrote.

Lawmakers directed the cannabis commission to not restrict patient access to medical marijuana, Wilkins wrote, adding that it's "common sense" that the

Legislature would not want the Department of Public Health to force the commission to do so.

Wilkins wrote that the cannabis commission has expertise in marijuana, and may decide, for example, to write different rules for vape pens for concentrated pot oil cartridges and vaporizers for raw marijuana “flower.”

Additives in the oils seem to be causing the illnesses, federal officials have said. No acute lung injuries have been publicly linked to flower vaporizers, but they are also covered under Baker’s ban.

Cannabis industry leaders said they hoped that regulated marijuana vapes would become available again for all consumers, not just medical patients.

“Certainly we wouldn’t allow something for medical patients, who may have compromised immune systems, that wasn’t also safe for the general public,” said David O’Brien, president of the Massachusetts Cannabis Business Association.

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High court to hear vape sales ban case in December

By Colin A. Young State House News Service, November 4, 2019, 4:16 p.m.

The Supreme Judicial Court has agreed to hear arguments related to Governor Charlie Baker's emergency ban on vaping products, elevating to the state's highest court a legal argument brought by the Vapor Technology Association against the administration's ban.

The SJC will hear arguments in the case during its December sitting, the court announced in an order issued Monday.

The governor's administration must file its brief with the court by Nov. 13, and the plaintiffs and interveners must file theirs by Nov. 25. The SJC transferred the governor's appeal of an Oct. 21 Superior Court order denying a stay and requiring the administration to go through the emergency regulation process to keep its ban on the sale of vaping products in place.

The governor's appeal had been pending before the Appeals Court. Baker said he imposed the ban — it was initially a four-month ban but has been whittled down by the courts to three months — in September to give the federal government time to investigate an outbreak of vaping-related lung injuries around the country, including two deaths and dozens of cases of illness reported in Massachusetts.

The ban has been challenged as an executive overreach that is causing deep financial harm to small business owners. As part of its regulatory filing, the Baker administration projected that a three-month ban on retail nicotine and marijuana vaping products has the potential to cost private businesses \$7 million to \$8 million in sales.

The administration is planning a Nov. 22 public hearing on the ban as it works to comply with a court order that it go through the usual emergency regulation process.

Judge allows vaping ban to stay in place for now, but rules governor may have overstepped legal bounds

By [Dan Adams](#) Globe Staff, October 21, 2019, 11:35 a.m.

The ban on the sale of nicotine vaping products in Massachusetts will remain in effect for now but is on shaky legal ground, after a state judge ruled Monday that Governor Charlie Baker overstepped constitutional bounds when he enacted the policy before affected businesses and members of the public could weigh in.

Responding to a request from vape companies to lift the ban while legal battles over the prohibition play out, [Suffolk Superior Court Judge Douglas H. Wilkins ordered](#) that nicotine vape sales in Massachusetts must be allowed to resume next Monday — unless the Baker administration submits the ban for consideration as a formal emergency regulation before then. The administration could also appeal to a higher court.

The ruling does not immediately affect the part of Baker's vaping ban prohibiting the sale of marijuana vapes at licensed cannabis retailers.

[Baker implemented the four-month ban on Sept. 24](#), after federal health officials linked numerous cases of mysterious lung ailments across the country to the use of vapes. Massachusetts has so far reported 28 vaping-related illnesses and one death to the Centers for Disease Control and Prevention and is investigating 63 more. Nationwide, nearly 1,500 people have fallen ill, while 33 have died.

To implement the ban on nicotine vape sales as an emergency regulation, as the judge suggested, state health officials would have to hold a public hearing and analyze how the ban would affect small businesses, among other

requirements. The Baker administration skipped those steps in September when it implemented the ban by claiming state law gives the governor sweeping unilateral emergency powers to address imminent public health crises.

“Input from affected industries and members of the public is a potent safeguard against executive abuse of discretion,” Wilkins wrote in his ruling. “If the executive branch avoids . . . input and safeguards, it unwittingly creates an echo chamber in which government officials’ own viewpoints reinforce each other, potentially causing unnecessary harm and ill-informed decisions.”

The judge added that the ban had been enacted “without transparent consideration” of the “very great and irreparable” financial harm it inflicted on vape businesses.

He also noted that only Massachusetts has banned all vape products, while other states have taken more limited steps — such as banning certain additives or flavors — to respond to the vaping health crisis. Ultimately, Wilkins said, the lack of public input and other checks on executive power has “led Massachusetts to adopt an over-inclusive ban that no other state has found necessary or appropriate.”

However, Wilkins wrote, immediately overturning the rule could invite “great uncertainty and confusion,” especially if it were legally re-imposed within a week.

Instead, the state under the order will have a week to either drop the ban or begin the process of implementing it as an emergency rule. If officials move forward with implementing an emergency regulation, Wilkins ordered, they must hold a public hearing by Dec. 24.

A Baker spokeswoman insisted the original ban was legally sound.

“The administration declared a public health emergency and ordered a four-month temporary ban for retail and online sales of all vape products to better understand what is making people sick,” Lizzy Guyton, Baker’s communications director, said in a statement. “The administration maintains that the order was properly issued.”

Speaking to reporters at the State House later Monday, Baker said his administration will decide within a day or two whether to appeal the ruling or obey it by starting the emergency regulation process.

“From the beginning, this was a public health question first and foremost,” Baker said. “And we recognized and acknowledged that the courts might be a place where this issue would play out. But I think for us the big issue is to recognize that the ban is still in effect.”

The Vapor Technology Association, the nicotine vaping industry group that had challenged the ban along with a Massachusetts vape shop, said the order by Wilkins vindicated many of its arguments — including that the ban had devastated local retailers and risked pushing consumers to buy dangerous illicit products — but said the ban should have been lifted immediately.

“We are pleased that the Superior Court recognized that we are likely to prevail on our claims that the [ban] was improperly issued and arbitrary and capricious,” Tony Abboud, the association’s executive director, said in a statement. “We regret, however, the court’s decision to allow this improper ban to stay in place for a week while the state considers other regulatory alternatives. Based on the court’s findings, the ban should be enjoined immediately, and we will be asking for that relief.”

Of the 29 vaping-related lung cases in Massachusetts, 20 reported vaping marijuana, seven reported vaping both marijuana and nicotine, and eight reported vaping nicotine only.

Monday’s ruling did not address the legal propriety of Baker’s similar ban on marijuana vaping products.

However, the judge’s concerns about the closed-door process Baker’s administration used in deciding to implement the ban could give licensed cannabis firms an opening to challenge that part of the ban. “These constitutional provisions should apply equally to any business, and no sales should be shut down if the means by which they were shut down were legally improper and overreaching,” said David O’Brien, president of the Massachusetts Cannabis Business Association. “We’re reviewing what our legal remedies [are].”

Also on Monday, Wilkins allowed a group of medical marijuana patients to join the case as coplaintiffs; they are seeking to lift the ban on legal cannabis vapes, arguing that vapes sold at licensed dispensaries are lab-tested and far safer than those sold on the street.

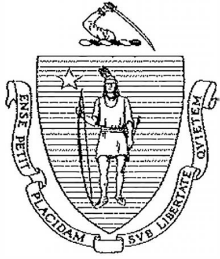
In defending the ban on marijuana vapes, the Baker administration has noted that most of the lung illnesses are related to THC products and pointed to the

death of a patient in Oregon who had reportedly used a vape from a regulated store there. Despite federal data linking only an infinitesimal proportion of lung illnesses to regulated cannabis vapes, an attorney representing the administration said in court that blaming illicit products alone was “just pure speculation, and I think it’s irresponsible.”

But in emotional testimony at an afternoon hearing, medical marijuana expert Dr. Peter Grinspoon and several patients excoriated Baker officials for saying that patients could use other forms of cannabis, insisting that vaping provided the only effective and practical relief for many of those suffering from chronic pain and serious ailments. Edibles, they explained, took too long to kick in, while smoking is harsh and unhealthy — and banned in most rental housing.

“I’ve got enough [marijuana vape cartridges] probably to go until the end of the week,” Douglas Luce, a former roofer who uses cannabis to treat extreme back pain resulting from multiple falls, testified in court. “After that, maybe I’ll go back to taking four oxycodones a day.”

Matt Stout of the Globe staff contributed to this report. Dan Adams can be reached at daniel.adams@globe.com.



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CHARLES D. BAKER
GOVERNOR

KARYN E. POLITO
LIEUTENANT GOVERNOR

GOVERNOR'S DECLARATION OF EMERGENCY

WHEREAS, the federal Centers for Disease Control and Prevention (CDC), the federal Food and Drug Administration (FDA), and state and local health departments nationally are investigating a multistate outbreak of severe lung disease associated with the use of vaping products including but not limited to e-cigarettes;

WHEREAS, as of September 19, 2019, the CDC had confirmed 530 cases across 38 states and U.S. territories, including seven fatalities in six different states;

WHEREAS, all reported cases have a history of vaping and have indicated a history of using vaping products containing tetrahydrocannabinol (THC), nicotine, or a combination of THC and nicotine;

WHEREAS, vaping products use an e-liquid that may contain nicotine, THC and/or cannabinoid oils, in addition to a combination of flavoring, propylene glycol, vegetable glycerin, and other ingredients and may also contain toxic chemicals such as formaldehyde, acrolein, acrylonitrile, propylene oxide, crotonaldehyde and acetaldehyde, as well as metal particles such as nickel, lead, and chromium, which can be inhaled into the lungs;

WHEREAS, although the recent outbreak is associated with vaping products, the specific cause of this disease is unknown;

WHEREAS, cases of vaping-associated pulmonary disease show diverse symptoms and signs of lung injury, including cough, chest pain, shortness of breath, low levels of blood oxygen, abnormal chest X-rays or CT scans, and pathologic evidence of damage to lung tissue that can be severe;

WHEREAS, nationally from 2017 to 2018 vaping use among youth has increased 78% among high school students and 48% among middle school students and the total number of children who are currently vaping rose to 3.6 million in 2018;

WHEREAS, in December 2018, the United States Surgeon General Jerome Adams officially declared vaping among youth in the United States an epidemic;

WHEREAS, Massachusetts youth usage mirrors national trends with 41% of all youth in 2017 reporting trying e-cigarettes and one in five reporting that they use e-cigarettes regularly;

WHEREAS, vaping products are marketed and sold in a wide variety of flavors that make them easier to use and more appealing to youth;

WHEREAS, nationally cases of vaping-associated pulmonary injury have occurred in all age groups, with 83% of cases occurring in those younger than 35 years of age;

WHEREAS, on September 11, 2019, the Commissioner of Public Health declared cases of unexplained vaping-associated pulmonary disease to be immediately reportable to the Massachusetts Department of Public Health (DPH) and further authorized the DPH to conduct surveillance activities necessary for the investigation, monitoring, control and prevention of this disease;

WHEREAS, to date more than 60 Massachusetts residents have already been reported with lung injury potentially related to vaping to DPH;

WHEREAS, as of September 24, 2019, five of these reports of lung injury meet the CDC case definition of confirmed or probable cases, and Massachusetts joins 38 other U.S. states in reporting cases to the CDC;

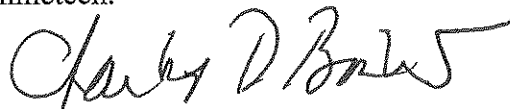
WHEREAS, these confirmed and probable cases in Massachusetts are among both teenagers and older adults and are linked to a range of vaped products; and

WHEREAS, it is necessary for the DPH to take action immediately to address this public health emergency;

NOW, THEREFORE, I, Charles D. Baker, the Governor of the Commonwealth of Massachusetts, pursuant to M.G.L. chapter 17, section 2A, declare that an emergency exists which is detrimental to the public health in the Commonwealth.

This declaration of a public health emergency is effective immediately and shall remain in effect until notice is given, pursuant to my judgment, that the public health emergency has terminated.

Given this 24th day of September two thousand and nineteen.

A handwritten signature in black ink, appearing to read "Charles D. Baker", written over a horizontal line.

CHARLES D. BAKER
GOVERNOR
Commonwealth of Massachusetts

ORDER OF THE COMMISSIONER OF PUBLIC HEALTH PURSUANT TO THE
GOVERNOR'S SEPTEMBER 24, 2019 DECLARATION OF A PUBLIC HEALTH
EMERGENCY

On September 24, 2019, Governor Charles D. Baker issued a declaration that a public health emergency exists in the Commonwealth due to severe lung disease associated with the use of e-cigarettes and vaping products and the epidemic of e-cigarette use among youth. For the reasons set forth in the declaration, in addition to evidence and facts presented at the Public Health Council meeting, and in consideration of the on-going federal and state investigation into the causes of vaping-related disease, I, with the approval of the Governor and the Public Health Council pursuant to G.L. c. 17, §2A, issue the following Order:

The sale or display of all vaping products to consumers in retail establishments, online, and through any other means, including all non-flavored and flavored vaping products, including mint and menthol, including tetrahydrocannabinol (THC) and any other cannabinoid, is prohibited in the Commonwealth.

“Vaping products” means: 1) any product intended for human consumption by inhalation regardless of nicotine content, whether for one-time use or reusable, that relies on vaporization or aerosolization, including but not limited to electronic cigarette, electronic cigars, electronic cigarillos, electronic pipes, electronic vaping product delivery pens, hookah pens, and any other similar devices that rely on vaporization or aerosolization; and 2) any component, part, or accessory of a product or device defined in subsection 1), even if sold separately. “Vaping products” does not include any product that has been approved by the federal Food and Drug Administration either as a tobacco use cessation product or for other medical purposes and which is being marketed and sold or prescribed solely for the approved purpose.

While this Order is in effect the Department of Public Health, along with any board of health or authorized agent pursuant to G.L. c. 111, §30, may take any enforcement action permitted by law or this Order to effectuate this Order as it applies to sales of vaping products to consumers.

Pursuant to the authority granted by G.L. c. 17, §2A, this Order may be enforced in the manner of a regulation adopted pursuant to G. L. c. 111, §31, and by injunction through proceedings initiated in the Superior Court. A person or entity found in violation of this Order may also be subject to the maximum fine provided in G. L. c. 111, §31; provided that violations shall be calculated on a per item and per transaction basis and may be punished cumulatively. Subject to valid court order issued by a court of competent jurisdiction, State Police or local law enforcement may seize any vaping products from entities or persons that continue to display or sell vaping products in violation of this Order.

The Cannabis Control Commission and the Division of Agricultural Resources shall enforce this Order to the extent it applies to their registered or licensed entities.

If any provisions of this Order or the application thereof to any person or entity or circumstance is adjudged invalid by a court of competent jurisdiction, such judgment shall not affect or impair the validity of the other provisions of this Order or the application thereof to other persons, entities, and circumstances.

This Order takes effect immediately and shall remain in effect, unless extended with the approval of the Governor and the Public Health Council, through January, 25, 2020, or until the declared public health emergency is terminated, or the Order is otherwise rescinded by me, whichever happens first.

IT IS SO ORDERED.



Monica Bharel, MD, MPH, Commissioner
Department of Public Health

Sept 24, 2019
Date

ORDER OF THE COMMISSIONER OF PUBLIC HEALTH
PURSUANT TO THE GOVERNOR'S SEPTEMBER 24, 2019 DECLARATION
OF A PUBLIC HEALTH EMERGENCY

On September 24, 2019, Governor Charles D. Baker declared a Public Health Emergency in the Commonwealth due to severe lung disease associated with the use of e-cigarettes and vaping products, and the epidemic of e-cigarette use among youth (Appendix A).

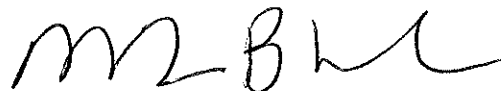
In response to Governor Baker's Public Health Emergency Declaration and with the approval of the Public Health Council, on September 24, 2019, I issued an Order which temporarily prohibited the sale and public display of all vaping products in Massachusetts (hereinafter, the "Emergency Order") (Appendix B).

In furtherance of the Emergency Order, on September 24, 2019 the Department of Public Health (DPH) issued notice of the Public Health Emergency Order to all Massachusetts tobacco retailers (Appendix C).

This Implementation Order is intended to ensure clarity for businesses subject to the Emergency Order and uniformity in enforcement.

- **Geographical Application:** The Emergency Order prohibits the sale of vaping products in Massachusetts.
 - A seller located in Massachusetts may not make an in-store sale of vaping products to a consumer located in Massachusetts.
 - A seller located in Massachusetts or a seller located in any other State may not make a sale of vaping products by online, phone, or other means for delivery to a consumer located in Massachusetts.
 - A seller located in Massachusetts may make a sale of vaping products by online, phone, or other means for delivery to a consumer located in another State.
- **Prohibition on the Physical Display of Vaping Products:** The Emergency Order's ban on the display of vaping products applies only to the physical display of vaping products in retail establishments in Massachusetts. The Emergency Order therefore requires Massachusetts retailers to remove from their shelves usable product that falls within the Emergency Order's definition of "vaping products."
 - It does not apply to the online "display" of vaping products.
 - It does not limit the advertisement of vaping products.

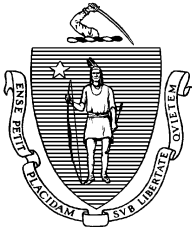
IT IS SO ORDERED.



Monica Bharel, MD, MPH, Commissioner
Department of Public Health

10/3/19

Date



The Commonwealth of Massachusetts
Executive Office of Health and Human Services
Department of Public Health
250 Washington Street, Boston, MA 02108-4619

CHARLES D. BAKER
Governor

KARYN E. POLITO
Lieutenant Governor

MARYLOU SUDDERS
Secretary

MONICA BHAREL, MD, MPH
Commissioner

Tel: 617-624-6000
www.mass.gov/dph

TO: Local Boards of Health
FROM: Patti Henley, Director, Massachusetts Tobacco Cessation and Prevention Program
Ron O'Connor, Director, Office of Local and Regional Health
DATE: September 24, 2019
RE: Implementation of DPH order regarding vaping products

On September 24, 2019, Governor Charles D. Baker declared a public health emergency in the Commonwealth due to severe lung disease associated with the use of e-cigarettes and vaping products, and the epidemic of e-cigarette use among youth (a copy of the Governor's Declaration is enclosed at Appendix A). As of September 19, 2019, the federal Centers for Disease Control and Prevention (CDC) had confirmed 530 cases across 39 states and U.S. territories, including seven fatalities in six different states. The commonality in all reported cases is a history of vaping, and a history of using vaping products containing tetrahydrocannabinol (THC), nicotine, or a combination of both.

On September 11, 2019, Massachusetts Department of Public Health Commissioner Monica Bharel declared possible cases of unexplained vaping-associated pulmonary disease to be immediately reportable to the Department of Public Health (DPH) and further authorized DPH to conduct surveillance activities necessary for the investigation, monitoring, control and prevention of this disease. As a result of this declaration, more than 60 preliminary intake reports have been received by DPH.

There is still much to learn about the causes and associated dangers relating to vaping. With the goal of protecting the health of Massachusetts residents, and in accordance with Governor Baker's public health emergency declaration and with the approval of the Public Health Council, Commissioner Bharel issued an Order which provides in part:

The sale or display of all vaping products to consumers in retail establishments, online, and through any other means, including all non-flavored and flavored vaping products, including mint and menthol, including tetrahydrocannabinol (THC) and any other cannabinoid, is prohibited in the Commonwealth. (A copy of the Order is enclosed at Appendix B).

As Boards of Health, you have demonstrated the capacity and commitment to help protect our residents across the state. Your diligent work with retailers will be crucial to our success in preventing further illness and death from vaping products. DPH will notify all known tobacco and vaping retailers that they must not sell vaping products and must remove these products from their shelves. DPH will rely on your

local expertise to help enforce this Order within each of your municipalities. This initial guidance is provided to assist Boards of Health in this enforcement. DPH will continue to update its guidance as necessary.

- Board of Health should help retailers better understand this public health emergency by providing additional communication around this order. *See Appendix C.*
- As you visit retailers, conduct inspections to ensure vaping products are not being sold and are not on display.
- If vaping products are being sold or remain on display, issue a cease and desist letter and direct the retailer to immediately stop selling and/or remove vaping products from display. *See Appendix D for a cease and desist order.*
- Revisit retailers within 24 hours of issuing a cease and desist order to ensure compliance.
- MDPH has established a tobacco complaint line – 1-800-992-1895 to assist in the monitoring and enforcement of this order. Complaints related to retailers in your municipality will be forwarded to you for follow-up.
- Additional guidance for enforcement, including fines, will be forthcoming.

For general questions related to the enforcement of the emergency order, contact the DPH Massachusetts Tobacco Cessation and Prevention Program (MTCP) at 617-624-5900.

We recognize the importance of cessation, and are making cessation resources as readily available as possible on by increasing support on our quit line: 1-800-QUITNOW.

We thank you for your continued work in our state, and for your significant contribution with this order. We look forward to working with you and supporting you in this and other statewide efforts.

Additional Resources:

- Visit the DPH website www.mass.gov/vapingemergency for updated information
- For media and press inquiries for DPH, Ann Scales 617-624-5006
- For vaping cessation and smoking cessation resources, see makesmokinghistory.org, or call 1-800-QUITNOW
- For general questions from the public, 617.624.5900
- To report a suspected pulmonary disorder related to vaping, go to <https://www.mass.gov/news/clinical-advisory-on-vaping-associated-lung-injury-reporting>

Appendices:

- A: Governor's Declaration of emergency
- B: Commissioner's Order
- C: DPH notification to retailers
- D. Cease and desist order
- Press release



**Board of Health
TOWN OF NEEDHAM
AGENDA FACT SHEET**



MEETING DATE: 11/08/19

Agenda Item	Continued Discussion of 57 Walker Lane Septic System Enforceable Agreement
Presenter(s)	Timothy Muir McDonald, Director of Health & Human Services Tara Gurge, Assistant Public Health Director

1.	BRIEF DESCRIPTION OF TOPIC TO BE DISCUSSED
Board of Health discussion about 57 Walker Lane septic system and existing enforceable agreement (legal document) requiring connection to municipal sewer within two years after the on-site septic system failed its Title V inspection in December 2017. Homeowner Mr. Tal Achituv wishes to discuss the enforceable agreement and its status with the Board of Health. <u>Updates</u> Met with Town Engineer, Tony DelGaizo. Asked him about BOH's request to conduct an assessment to determine an accurate cost estimate on connecting the property located at #57 Walker Lane to the municipal sewer line. He will set up a meeting with a vendor to review the costs involved for that specific project. Will provide a cost estimate to the Board of Health once it's been evaluated. Tony met with a vendor. They will have an estimate to connect this home next month. Tony also stated that Jones Contracting would also like to confirm the soil type on Walker Lane by digging a test pit in the road shoulder – not on the owners property. So at the request of the BOH, DPW could dig a test pit and provide the soil information to the vendor so that he can provide a better estimate. The vendor provided a draft cost estimate for sewer connection.	
2.	VOTE REQUIRED BY BOARD OF HEALTH
No specific vote is required, nor is one expected.	
3.	BACK UP INFORMATION ATTACHED
Packet with information including email correspondence, state experts, and enforceable agreement, along with nine-page submission from Mr. Achituv.	

Tara Gurge

From: Tara Gurge
Sent: Friday, May 17, 2019 11:07 AM
To: 'Tal Achituv'
Subject: RE: FW:URGENT- 57 walker lane HEARING WILL
Importance: High

Tal-

Thanks for the follow-up email. It is very helpful to know that these meetings and these sewer connection discussions are taking place. I was not made aware of that. When is your next meeting? The Health Division would like to attend. Let me know. I will also follow-up with the Town Engineer with this latest information that you provided.

Also – Just a reminder. Here are the email excerpts noted below that were discussed and agreed to when we allowed your pipe repair to be conducted, along with my follow-up email correspondence from my contact a MassDEP. This Enforceable Agreement Order was given by the Town of Needham Engineering AND Health Depts. back in November 2017, as you may recall. (See highlighted area.) See below:

On Thu, Nov 30, 2017 at 4:37 PM Tara Gurge <TGurge@needhamma.gov> wrote:

Tal -

Great – So I'm taking this as the most updated version. I just got off the phone with Tom Ryder from our Town Engineering Dept. **He is in agreement, that we can allow this pipe repair between the home and the septic tank, as long as you agree to sign an 'Enforceable Agreement' with the Health Department** which states that you will be connecting to the town municipal sewer system in the near future (next couple of years.)

Email from MassDEP – After we received your follow-up info. that you provided to me from your contacts at MassDEP, we again reached back out to our contact below and asked her if indeed **the septic system pipes, along with the septic system components, are all part of the complete septic system, and that if a pipe fails due to its age, then that is also considered part of the complete septic system,** thus a new compliant Title Five septic system needs to be installed and/or the property must be connected to the municipal sewer system? And here was her direct response. SEE BELOW:

Email excerpt from Claire Golden @ Mass DEP – (see attached - sent 3/13/19)
There is an existing Enforceable Agreement for the upgrade which was consented to. The Enforceable Agreement is, to the best of my knowledge, in full force and effect.

The upgrade needs to happen either by enforcing the Agreement and/or pursuing other enforcement options. With orangeburg pipe you're likely looking at a 60 year old system that has outlasted standard systems and needs an upgrade.

I hope this helps.

Claire



Goal need a proposal to be submitted (as stated in recent email) - To extend order. Got to approve (show evidence that working to connect)

Claire A. Golden, EEIV
MassDEP Wastewater Management and Surface Water Permitting Programs
205B Lowell St
Wilmington, MA 01887
978-694-3244
978-694-3499 (fax)
claire.golden@mass.gov

Follow MassDEP on Twitter at <http://twitter.com/MassDEP>
Visit our website at www.mass.gov/eea/agencies/massdep

PLEASE NOTE: If you cannot meet this Enforceable Agreement deadline, we must know this ASAP. We may be able to work with you on giving you a one-time extension, but you must submit a detailed sewer connection proposal to all Town Depts. involved in giving us all details on this project, which must also include strict timeframes for this sewer connection. This proposal will need to be submitted to the Board of Health for their final approval in a timely manner. (The BOH meets on a monthly basis.)

Please get back to me and let me know if you have any follow-up questions on that requirement. I will also need to hear back from you on when your next meeting is scheduled for, and where this meeting is taking place, etc.

Thanks for your continued cooperation in this urgent public health matter.

Thanks,



TARA E. GURGE, R.S., C.E.H.T., M.S.
ASSISTANT PUBLIC HEALTH DIRECTOR
Needham Public Health Division
Health and Human Services Department
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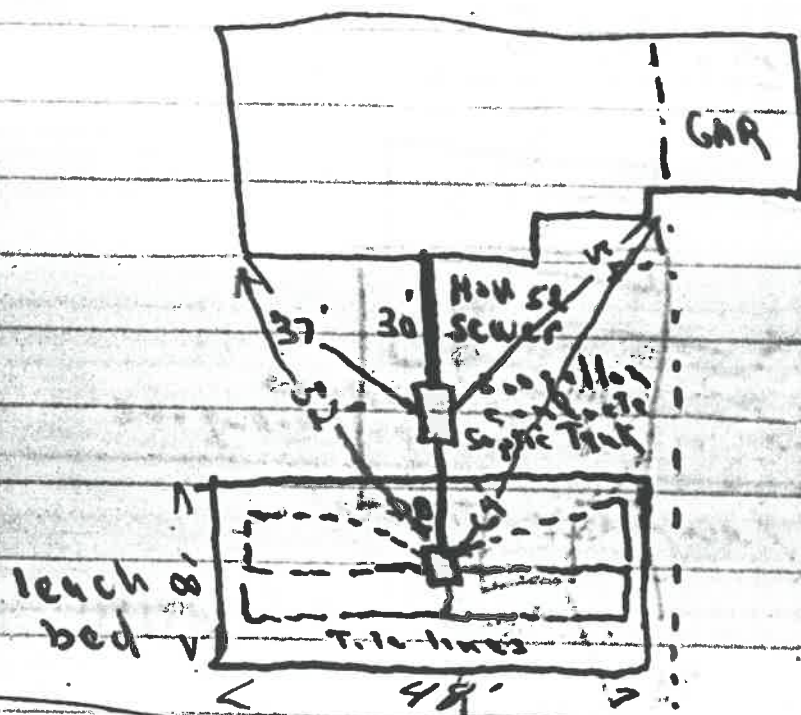


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42 ✓

B224-0

Jensen-Bielski - 57 WALKER LANE



Walker Lane

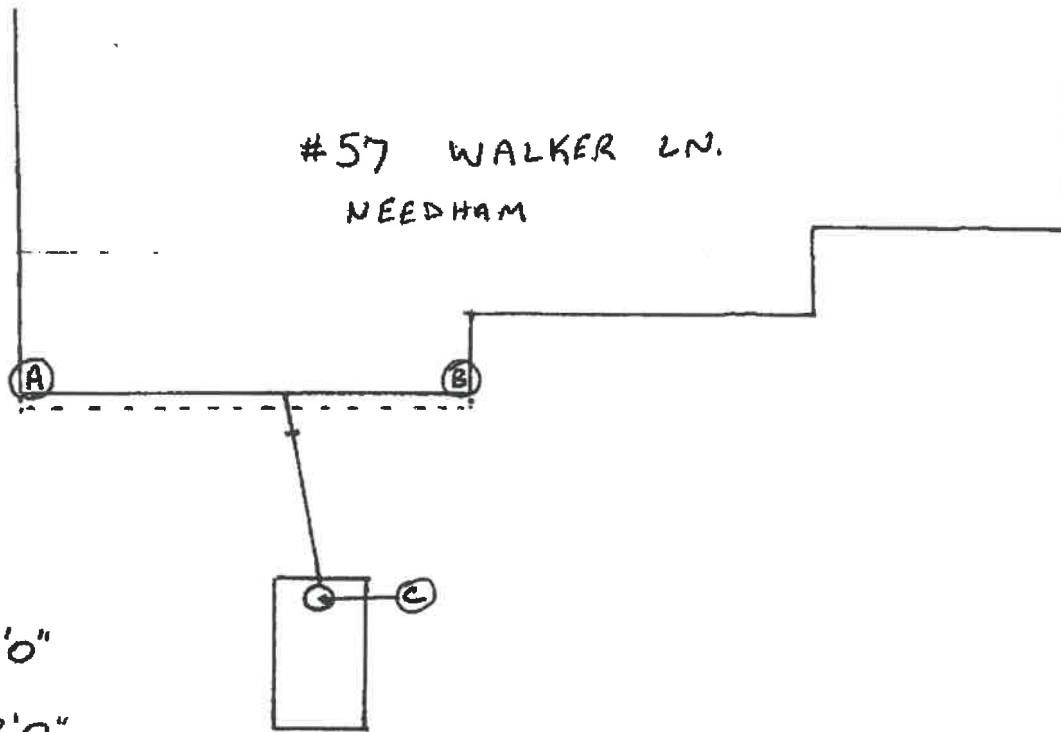
9/26/56

Leach system in properly but
 inlet line from Septic tank to
 Distrib. box seems lower than
 leach tile lines - nec. to raise.
 10/15/56 INLET LINE TO DISTRIBUTION

BOX RAISED

FINAL APPR - 10/15/56

#57 WALKER LN.
NEEDHAM



A TO C = 34'0"

B TO C = 28'0"

Pipe Replaced from
Existing CAST IRON COMING
OUT OF HOUSE INTO Existing
SEPTIC TANK. New inlet tee
installed.

12/1/2017

Kenny Jones Corp.

P.O. Box 72

WALPOLE, MA 02081

508-850-5151

Tara Gurge

From: Tal Achituv <tal@achituv.com>
Sent: Thursday, November 30, 2017 5:07 PM
To: Tara Gurge
Cc: Rachel Achituv
Subject: Re: Repair to sewer main at 57 Walker Lane

Thanks Tara.

Kenny says he will be ready for inspection at 1.

On Thu, Nov 30, 2017 at 4:37 PM Tara Gurge <TGurge@needhamma.gov> wrote:

Tal -

Great – So I'm taking this as the most updated version. I just got off the phone with Tom Ryder from our Town Engineering Dept. He is in agreement, that we can allow this pipe repair between the home and the septic tank, as long as you agree to sign an 'Enforceable Agreement' with the Health Department which states that you will be connecting to the town municipal sewer system in the near future (next couple of years.)

We understand, due to your recent email, that you will not be finishing off your second floor addition space (as stated in the attached document that was in your septic file – done by previous owner), until you connect your property to the municipal sewer, once it gets brought down the street in front of your house.

The Enforceable agreement will be following in a separate email shortly. In the meantime, you may set up an appointment with Kenny Jones for the repair. I know you mentioned that you wanted to conduct this repair tomorrow, so right now we have some slots available at 9 AM, and also any time between 12-2 PM in the afternoon. We will have to meet with the septic installer on site to confirm that this pipe was replaced and that it's at the correct invert and that it's Schedule 40 PVC piping, etc.

Please let me know what time works best for the installer, so we can put that in our schedule.

Thanks,

Tara

From: Tal Achituv [mailto:tal@achituv.com]
Sent: Thursday, November 30, 2017 4:04 PM

To: Tara Gurge
Cc: Rachel Achituv
Subject: Repair to sewer main at 57 Walker Lane

Dear Tara,

To follow up on our conversation, I would like to summarize the conditions and plans regarding the sewage emergency at our house at 57 Walker Lane.

The situation is that there is a blockage in the pipe going from the house to the septic tank caused by deterioration of the orangeburg (cardboard+tar) pipe which connects the cast-iron main line to the septic tank.

This deterioration causes cracking/perforation, narrowing, and root-penetration into the pipe, which in turn also allows sewage to seep into the ground - since it is sitting in the blocked pipe which is no longer structurally sound, as well as backing up of sewage into the basement.

The house has an extension, built in 1996 by the previous owners, and we are aware that it cannot be turned into a bedroom without first making the necessary improvements to make such a remodel compliant with Title V (either through expanding/replacing the septic, or connecting to sewer).

Also, our intention is to connect to sewer, and we have been working as a group as part of an ongoing effort together with the town, primarily through Conservation (Matt Varrell), to understand the best way to deal with road reconstruction, utilities burial, gas service and sewer service. The main idea is to wait before taking any action until the residents and the town could design together a solution that incorporates all the environmental needs and requirements, and not only minimize cost and maximize effectiveness, but also minimize any risk to the environment by only opening up the road once and then replacing it with a proper modern road. The current state is that in this year's town meeting a budget has been approved to run a study to understand what is causing the deterioration of the pond. Pending the study's finding, our hope is that together with the town we can deal with floodwater infiltration, roof runoff, and replacement of septic systems to help address the level of nutrients flowing into the pond causing it to become unusable to the public.

Given that these bureaucratic processes take years, it is hard to predict by when we would be able to finalize all of these plans. I am encouraged that the study that we worked hard to get is due in the next few weeks, and that the new director of conservation seems to be as eager as Matt Varrell to work with the neighborhood towards finding a solution for the pond. This has been 2+ years of meetings, and I hope that we could arrive at a solution for walker lane in as little time as possible. It greatly depends on the rate in which the town will be moving forward with planning and recommendations for remediation of the nutrient overflow into the pond.

Had it been easier (or even feasible) to connect to sewer we would have chosen to do that over fixing the orangeburg pipe. But since the sewer main is two houses away, and more than 10 feet deep (well below the water table) it is a complicated and expensive process that cannot be feasibly done before the ground freezes anyway. I have been assured of this by several contractors. The ones that have the necessary equipment to pump out the water while they work are either overbooked, not licensed in the town, or unreachable at this time.

I had hoped to avoid having to deal with replacement of the orangeburg pipe through alternative means of opening up the clogged pipe but since Chris Seariac, the superintendent of water/sewer strongly advised against it, I am left with no other option but replacing the portion of the pipe that is deteriorated, for which we require a permit from the board of health.

Given this situation, the background, and the future plans, I hope that you can approve the permit for this work.

Best regards,

Tal Achituv.



Needham Public Health Department

1471 Highland Avenue, Needham, MA 02492
www.needhamma.gov/health

781-455-7500 ext. 511
781-455-0892 (fax)



December 1, 2017

Mr. Tal Achituv
57 Walker Lane
Needham, MA 02492

Re: Septic System Enforceable Agreement for #57 Walker Lane in Needham

Dear Mr. Achituv;

As you recall, we recently issued a Septic Construction permit to allow you to replace the Orangeburg pipe leading from your home to your septic tank, at the property address noted above, which according to our records is only an 800 gallon septic tank, which does not meet today's Title Five Septic System standards. The Town Engineering and Water and Sewer Departments, along with the Public Health Division, allowed this repair under the agreed to condition that an **Enforceable Agreement** would be signed and dated by you, which states that you will be connecting to the municipal sewer system in the next couple of years. (NOTE: We allowed you to conduct this repair in lieu of submitting a failed Title Five Septic System report, where if your system was found to be in failure, due to this compromised pipe (which you reported that raw sewage was actively backing up into your home), PER MASS DEPARTMENT OF ENVIRONMENTAL PROTECTION (MA DEP) REQUIREMENTS, YOU MUST CONNECT THIS SEPTIC SYSTEM WITHIN TWO YEARS FROM THE DATE OF THE FAILED TITLE FIVE INSPECTION REPORT, which obligates you to connect on or before the date that your emergency repair was made, which was on December 1, 2017.

Since at this time, it is not possible to connect to the municipal system (which is located two houses down), we are requiring that this **Enforceable Agreement** be set up and adhered to in order to meet our septic system abandonment/connecting to sewer requirements. This is an agreement between the Public Health Division and the property owner.

See Enforceable Agreement noted below:

I, Tal Achituv, who owns the property located at #57 Walker Lane in Needham, MA, agrees that the property will be fully connected to the municipal sewer line on the street on or before December 1, 2019. I agree that once the property is connected to the municipal sewer system, that a Septic Abandonment Form (see attached) is filled out and signed/dated, and submitted back to the Public Health Department for review/approval. (NOTE: I agree that this property is currently being evaluated and a decision will be made on the timing of this connection in the near future. I will continue to keep the Public Health Dept. in the loop on that.)

Property owner – Print: Tal Achituv / Sign: [Signature]

Date: 12/15/17

Please call me if you have any questions at (781) 455-7500; Ext. 262.

Sincerely,

[Signature]

Tara E. Gurge, R.S., C.E.H.T., M.S.
Assistant Public Health Director

Tara Gurge

From: Golden, Claire (DEP) <claire.golden@state.ma.us>
Sent: Wednesday, March 13, 2019 11:35 AM
To: Tara Gurge
Cc: Brander, Kevin (DEP)
Subject: RE: Enforceable Agreement question

Tara,

There is an existing Enforceable Agreement for the upgrade which was consented to. The Enforceable Agreement is, to the best of my knowledge, in full force and effect.

The upgrade needs to happen either by enforcing the Agreement and/or pursuing other enforcement options. With orangeburg pipe you're likely looking at a 60 year old system that has outlasted standard systems and needs an upgrade.

I hope this helps.
Claire



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From: Tara Gurge [<mailto:TGurge@needhamma.gov>]
Sent: Tuesday, March 12, 2019 9:23 AM
To: Brander, Kevin (DEP)
Subject: Enforceable Agreement question
Importance: High

Kevin —

Hello — Hope you are doing well. I have a question - Is it true that the septic system pipes, along with the septic system components, are all part of the complete septic system, and that if a pipe fails due to its age, then that is also considered part of the complete septic system, thus a new compliant Title Five septic system needs to be installed and/or the property must be connected to the municipal sewer system?

We had a septic system fail in town near a pond that had 'Orangeburg' piping that had collapsed that needed immediate Emergency replacement, and we allowed the emergency repair ONLY under the condition that the system would be

properly decommissioned and then tied into the municipal sewer system within a 2-year time frame. So we issued an Enforceable Agreement as a result. (We are approaching the 2-year deadline, and we are now getting push-back from the owner that is now stating that this was a simple 'plumbing issue' and not a septic issue, and the Enforceable Agreement does not apply in his case??? Is that accurate?

Please let me know.

Thanks,



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July 12, 2019

Tara E. Gurge
Assistant Public Health Director
Needham Public Health Dept.
1471 Highland Ave.
Needham, MA 02492

Dear Ms. Gurge,

At your request I am writing to describe the efforts that I have made since the signing of the "Enforceable Agreement" on December 1, 2017, approximately 18 months ago. At that time I had contacted the Town because I believed my septic system may have failed. As we now know, the septic system did not fail, but the "Orangeburg pipe" which connected my septic system to the house did fail. In the process of my investigations, I learned that this kind of pipe which is much like cardboard, was used during the war and post war era instead of cast iron. The septic related problem I experienced has now been resolved by replacing that piping with regulation PVC piping suitable for a 21st century system.

I understand that the Agreement requires that "per Mass Dept. of Environmental Protection (MA DEP) requirements, I must connect this septic system within two years from the date of the failed title five inspection report". I will provide below details on the efforts I've made to comply with this agreement. There are two additional conditions that relate to this compliance.

1. My septic system has been tested and confirmed that it is indeed in good working condition, and in fact did not fail.
2. My conversations subsequent to my original contact with the Town have reinforced an understanding that I would be required to take "reasonable means" to comply with the agreement and connect to Town sewer.

While I considered asking you to waive this Agreement now that we know the septic system has not failed, I do want to make clear that I am still very committed to connecting to the Town sewer system. However, as you will see in the information below, the steps required to connect by December 1 do not, in my belief, meet the standards of "reasonable means".

When this first happened and I began the process to cost out and undertake a remedy to the situation, I was given an estimate by the both town engineering staff, as well as contractors, that I should expect to pay between \$20K-\$30K to connect my home to the Town sewer. I assume that \$40K would be the upper range of what the Town would expect to be a "reasonable" cost to comply with the Agreement. Had the estimates I received come anywhere close to this estimate, I would have proceeded. But the estimates I received (and I'm summarizing here, more details are below) led to a likely price of closer to \$95K-\$120K range and possibly higher when the terrain of the land and proximity to the pond is considered. More important, a decision to act unilaterally to solve my own problem would involve interfering with or even blocking the longer range plans of my Walker Pond neighbors.

Initially, since the agreement was signed just as the ground was starting to freeze, we had to wait till spring before any contractor would seriously engage. Early in the spring of 2018 I started reaching out to contractors, and once some started coming on-site it became clear that this kind of job cannot be done by most contractors due to the complex conditions including length, depth, proximity to wetlands, need to work under the water table, etc. It has been extremely difficult to get contractors due to these reasons.

Of the ~50 contractors I contacted, the vast majority was incapable of doing this. The contractors who can, of which there are only a few in this area, are very busy. Additionally, the complexity-to-size ratio makes this job of no interest to some (such as Lynch Development). Bigger contractors who aren't scared away by the complexity-size ratio are booking into 2021 (such as Fed Corp). The initial efforts through the spring and summer of '18 have come up with two willing and able contractors (Malone & Murphy), only one of which would actually communicate and come for a site visit (Murphy).

Cost estimates from Bob Murphy were in the 80-100k range, exclusive of engineering/permits/fees. The town engineer pushed back on these costs, but the town engineer's estimates were not taking into account some of the complexities that are apparent in the field and were plans that did not take into account the need to not block the neighbors from being able to connect as well, like the need for the sewer to stay deep enough, and the need for a manhole, etc.

After several iterations between Bob and Tony, either way you look at it the project comes out at 90-130k with the engineering costs of \$10K-\$30K excluded. The high engineering costs make even looking into getting a more serious quote from Bob than the one you'll find attached infeasible. Moreover, the engineering process is only likely to cause further increases in the costs rather than savings due to extra findings that may come up.

In our meeting with the town, which you attended back in May, Tony the town engineer had mentioned the option for the town engineering department to develop such a plan for the neighborhood, if we exhaust all options for finding a feasible solution for connecting my house to the town sewer. He had pointed out that he knows at least one more contractor who is currently doing similar work, and which was not on my lists of contractors -- Jones Contracting.

After finally getting Jones Contracting on site, you'll find the estimate attached below, which is in-line with Bob Murphy's estimates, if not a little 'worse' (more expensive). Jones also pointed out that in the work done elsewhere in Needham, at similar depth and also near water, additional costs of tens of thousands of dollars kept being added due to findings on the ground (unsuitable material, digging depth required wider trenches and more road reconstruction, etc.) and suggests that this would likely cost more.

I have also been in touch with MA DEP, in efforts to understand the requirements and limitations that may be in effect, as well as the rest of the neighbors in order to attempt to bring (average) cost and complexity down, and I am glad to report that the neighbors on the road who are on septic systems are generally looking forward to being able to connect to sewer, if costs are reasonable.

At the DEP I reached out to Marybeth Chubb, and Claire Golden; The advice I received from both the Boston office as well as the North East Regional Office supports my assessment that while it is important that we seriously look into connecting to sewer, that the failure of the pipe leading from my house to the septic system is not a cause for failing of the septic system itself. They also mentioned that the two year requirement is not a MA DEP requirement, but rather that timing on these cases are entirely within the control of the LAA (in our case, the Needham BoH).

We are also very optimistic, through the neighborhood efforts, that through an integral approach to the all the issues at the town involving the road, walker lane, and walker pond, we will be able to come to the best outcome - of everyone connecting to sewer.

While most of my efforts have been invested towards finding a way to connect to sewer, I have also looked into replacing the septic system, and you'll find a quote for a system that is suitable both for my house, and to the proximity to the pond (a presby EnviroSeptic) which comes in at \$30K.

I hope that we can all agree that it is worth putting time and effort on all sides to figure out how we might be able to connect to sewer, rather than end up installing a septic system. I think that this process has taught both you and me a lot about the situation that we did not realize at the beginning, and I hope that you would agree that the complexity uncovered merits reconsideration.

In summary, I signed the agreement with the understanding that this was, at most, a \$30K-\$40K problem, that it was required by MA DEP and that our septic system has failed. I submit below evidence of my good faith efforts to comply with the Agreement. Because none of these understandings are correct I respectfully request that the Agreement be set aside or voided. I further suggest that because the Town and the Walker Pond neighborhood have a long range interest in permanently resolving the potential of septic failures, and have a long range interest in preserving and protecting Walker Pond that the Dept of Public Health replace that Agreement with an Agreement to engage with the Walker Pond neighbors to explore the problems and potential solutions, involving a range of public and private experts, to develop a consensus plan of action.

Please find attached below:

- Timeline of my efforts to comply with the agreement
- Partial list(s) of contractors I have contacted
- Sewer Cost estimates from Bob Murphy
- Sewer Cost estimates from Jones Contracting
- Report from Kenny Jones after inspecting the septic system recently
- Septic (EnviroSeptic) estimate from Kenny Jones
- Map showing the other locations of sewer in the vicinity, showing that there are not better options for sewer than the one explored (initially we were hoping that the sewer on Central Ave is closer)

From Russell Jones - Jones Contracting

07/01/2019
19010904

5:53
Needham Vs Walker Ave

BID TOTALS						
Biditem	Description	Status - Rnd	Quantity	Units	Unit Price	Bid Total
10	Police Details Reimbursement	U	1.000		30,000.00	30,000.00
20	Straw Wattles/Compost Tubes	U	1,000.000	LF	12.00	12,000.00
30	Silt Fence	U	1,000.000	LF	8.00	8,000.00
50	Tree Removed (Under 24 ")	U	5.000	EA	1,500.00	7,500.00
60	Tree Removed (24" and Over)	U	1.000	EA	5,000.00	5,000.00
70	Class A Rock Excavation	U	0.000	CY	150.00	
80	Test Pits and Auger Borings	U	5.000	EA	500.00	2,500.00
90	Ordinary Borrow	U	300.000	CY	25.00	7,500.00
100	Pavement Replacement - Gravel Sub Base Course	U	200.000	CY	30.00	6,000.00
110	Pavement Replacement - Gravel Base Course	U	295.000	CY	30.00	8,850.00
120	Pavement Replacement - Binder Course	U	250.000	TN	150.00	37,500.00
130	Pavement Replacement - Top Course	U	390.000	TN	150.00	58,500.00
150	PVC Sewer Pipe 8"	U	730.000	LF	80.00	58,400.00
160	Chimney	U	5.000	EA	2,500.00	12,500.00
170	Connection to Existing Sewer Structures - Coring	U	1.000	EA	2,500.00	2,500.00
180	Leakage Testing	U	1.000	LS	15,000.00	15,000.00
200	Sewer Manhole - 12 FT	U	6.000	EA	3,500.00	21,000.00
210	Frame and Cover - Sewer	U	6.000	EA	800.00	4,800.00
220	Sewer Service Lateral	U	500.000	LF	50.00	25,000.00
240	Sawcutting Cementitious & Bit Concrete	U	2,600.000	LF	3.00	7,800.00
250	Bitumen for Tack Coat	U	50.000	GL	10.00	500.00
290	Class I Temporary Pavement Course	U	225.000	TN	150.00	33,750.00
300	Tree Protection	U	7.000	EA	500.00	3,500.00
310	Loam Spread & Compacted	U	50.000	CY	40.00	2,000.00
320	Seeding	U	360.000	SY	4.00	1,440.00
394	Removal of Extra Asphalt	U	100.000	CY	44.31	4,431.00

\$375,971.00

Bid Total $\Rightarrow$ \$375,971.00

Septic Evaluation



2092 Main St.
Walpole, MA 02081

Office: (508)-850-5151

Cell: (774)-259-4062

www.kennyjonescorp.com

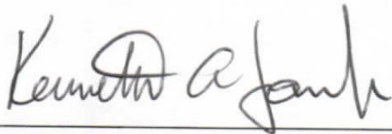
kenny@kennyjonescorp.com

Septic System Examination:

RE: 57 Walker Ln. Needham, MA

On Friday 6/28/19 I examined the existing septic system at 57 Walker Ln. Needham, MA. I opened the septic tank covers and found that the inlet and outlet tees were in place and that the level in the tank was good.

I located the distribution box and found that the level was at the bottom of the outlet lines and that all outlet lines were taking effluent when water was added to the box with a garden hose.

A handwritten signature in black ink, appearing to read "Kenneth A. Jones, Jr.", is written over a horizontal line.

Kenneth A. Jones, Jr. – President Kenny Jones Corp.

Septic Estimate

Kenny Jones Corporation
P.O. BOX 72
Walpole, MA 02081
Phone 508 850-5151
kenny@kennyjonescorp.com
www.kennyjonescorp.com



ADDRESS

Tal Achituv
57 Walker Ln.
Needham, MA 02492

PROPOSAL 1781

DATE 06/30/2019

ACTIVITY	QTY	RATE	AMOUNT
Engineering Proposal submitted for work at 404 N. Main St. Sharon, MA. Price includes the following: SEPTIC SYSTEM DESIGN WORK: \$4,775 - Provide backhoe services to dig for perk test = \$400 - Provide permit fees to Town of Needham = \$1,375 - Provide services of Glossa Engineering, Inc. to provide the following: = \$3,000 - Perform soil analysis and perk test - Create septic system design plan - Once system is installed create "as-built" plan Note: Additional costs may be incurred if Notice of intent / Order of conditions are required by Needham Conservation Commission	1	4,775.00	4,775.00
Septic System Conceptual Estimate submitted for work at 57 Walker Ln. Needham, MA. Based on site visit on 6/28/19 and other work performed in the area. A firm proposal will be created once design plans have been completed and approved. Price includes the following: - Furnish & install 125' of filter mitt erosion control barrier - Pump, crush, and remove existing septic tank and leaching area as necessary to get new system in - Furnish & install new, 1,500 gallon, H-10 loading, 2-compartment septic tank with risers & covers - Furnish & install new H-10 distribution box with riser & cover as necessary - Furnish & install septic sand / ASTM C-33 concrete sand as necessary (approx. 200 yards) - Furnish & install 240' of Presby Enviro-septic leaching pipes - Furnish & install observation ports in leaching area - Furnish & install vent pipe including granite post style vent concealer - Furnish & install magnetic locator tape over system components - Backfill and grade site per plan, blend in yard to try to smooth out remove excess fill (approx. 100 yards) - Loam & hydro-seed areas disturbed by system installation	1	26,000.00	26,000.00

Payment to be made as follows: 1/2 payment at start of job, and balance upon completion. Any deviations or alterations from above specifications, involving extra costs will be executed only upon written order, and will become an extra charge over an above original proposal. *Ledge is an extra charge.

Requests for additional Hydro seeding after initial application (if included in proposal) is an additional charge.

Contractor assumes no responsibility for any damage to underground sprinkler systems or driveways.
All agreements are contingent upon strikes, accidents or delays beyond our control. Acceptance of the Proposal constitutes a contract.
Proposal will be honored for thirty (30) days from date of issue.

TOTAL \$30,775.00

Accepted By

Accepted Date

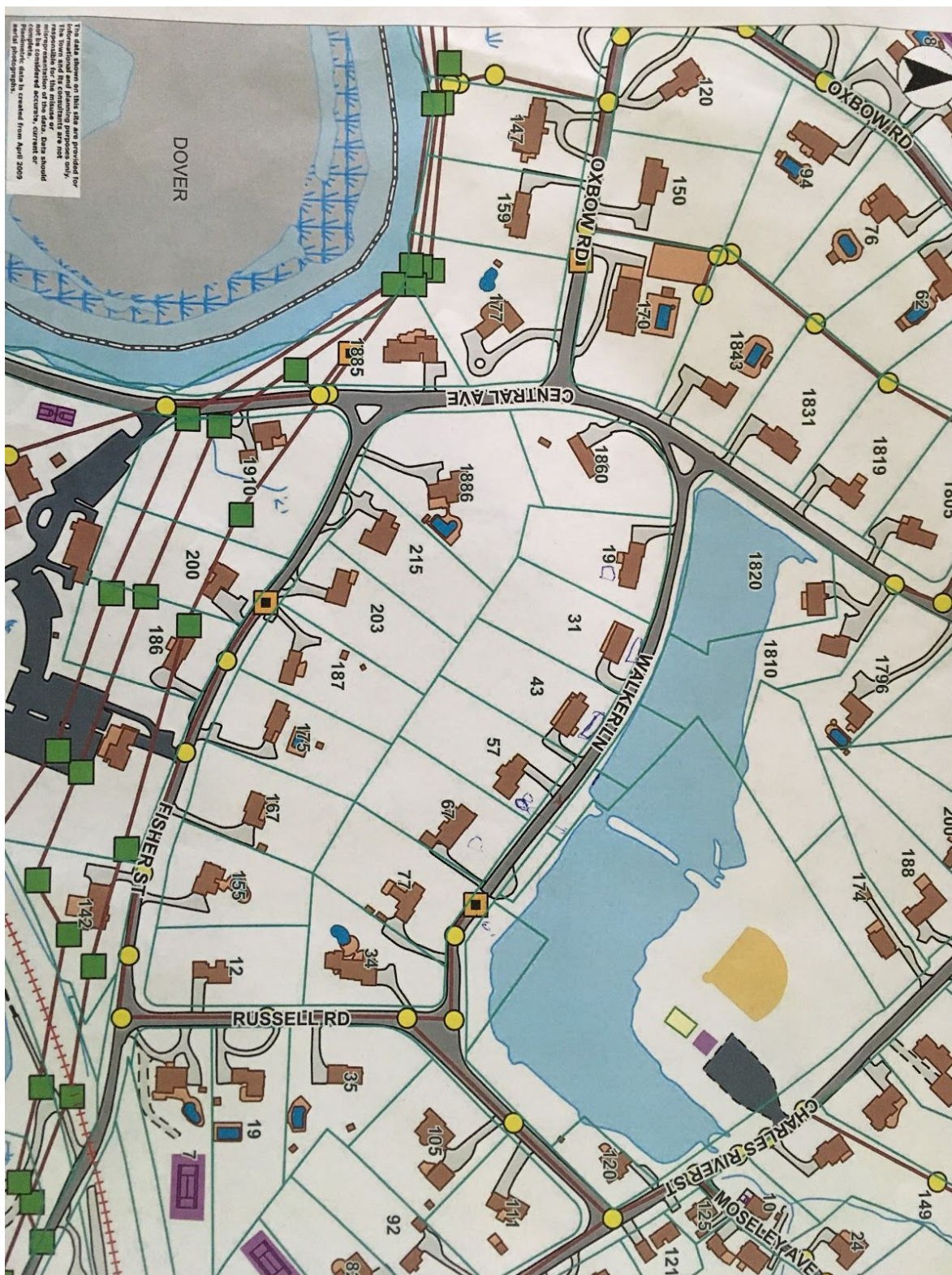
PAID FEE

CONTRACTOR LICENSE LIST

7969-bbh-18t

40 days
settling

Sewer location in the area



Timeline

Date	Event
November 1, 2017	Sewage in basement - Talk to Water/Sewer (Chris) - showing video - recommended against pipe-in-pipe,
November 29, 2017	Spoke to Kenny Jones
November 29, 2017	Sent plans to Karen Fruci
November 30, 2017	Acknowledged plans - said Kerry Malone will be in touch
November 30, 2017	Showed plans to Tom @ DPW/Engineering
December 1st 2018	Got permit + Work done -- E-mail understands connecting to sewer once it is in front of my house
December 15, 2017	Signed Enforceable Agreement given to Tara
March - April	Called contractors (see list attached)
May 4, 2018	Touch base w/Tara
May 8, 2018	Tara response
May 18, 2018	Tara check-in
June 27, 2018	Neighborhood meeting
July 16, 2018	Emailing with CRWA and MA River Alliance
July 23, 2018	Call with MA River Alliance
August 14, 2018	Neighborhood meeting - Pond + Road + CRWA + MARA + Garlick [Tal, Dan, Peter and Mark]
September 6, 2018	Sent plans to Bob Murphy [Asked that he try to come by before the 16th]
September 11, 2018	Town meeting about stormwater by-laws
September 25, 2018	Bob Murphy too busy
September 26, 2018	Spoke to Malone on the phone, emailed plans AGAIN
September 28, 2018	Bob Murphy follow up
October 4, 2018	Meeting on-site with MA Rep. Garlick re: pond, sewer

October 10, 2018	Reach out to MA Rep. Garlick in effort to help understand State requirements
November 2, 2018	Tara Check-in, Kerry Malone claims to not have documents (sent months ago, and then again)
November 2, 2018	Response to Tara - Malone not replying
November 5, 2018	Tara check-in
November 5, 2018	response to tara
November 5, 2018	Tal <> Tara
December 19, 2018	Tara check-in
Feb-Mar 2019	Back and forth with Bob Murphy, looking for NEW engineering plan
March 7, 2019	DEP - Sanh.Tran [310 CMR 15.305 - LAA can set own deadline for completion of upgrade]
March 12, 2019	Bob Murphy + Buckley Engineer @ Bay Colony Group
March 20, 2019	Tara check in- follow up on engineering, Tony suggest a <60k solution (which won't work)
March 25, 2019	Quote from Bill Buckley at Bay Colony Group - \$12k + 3 months turnaround
March 27, 2019	Neighborhood meeting - Quotes on road, further discussion on septic and sewer
March 29, 2019	DEP - Phone Marybeth Chubb / Claire Golden / Kevin Brander
April 1st 2019	DEP - Olusegun Onatunde -Forwarding to NERO
April 15, 2019	(date approx) Phone conversation with Claire Golden
April 24, 2019	Neighborhood meeting - Road re-pave delayed while we wait for sewer answers; Agreed to patch soon as we wait
April 26, 2019	Tara Checks in
May 14, 2019	Tara Check-in
May 16, 2019	General overview update to Tara
May 30, 2019	Tara checking in with town Chris/Tony 'have not heard from me in a while'
May 31, 2019	Meeting @ DPW with Tara, Tony+Tom(Engineering), Sean (Water/Sewer), and Deb (Conservation)
June 2019	Contacting Jones contracting working on Winding River Rd
	Quote from Jones Contracting comes in at > \$100k per house, even after aggregation
June 27, 2019	Discussion with Conservation Commission
June 30, 2019	Kenny inspects Septic, find it to be functioning properly, provides quote for EnviroSeptic

Budget pricing for sewer connection to #57 Walker Ln. 190lf sewer from depth of 10.5' to 8.7'

Permanent trench patching

Service to front of house

TOTAL \$

Please keep in mind that we have the following exclusions/conditions that would all apply to this potential project:

1. Schedule to be determined.
2. Labor is to be open shop.
3. The following items are not included:
 - a. Engineering and control.
 - b. Engineer produced as-builts
 - c. Permits & Fees
 - d. Rock removal, excavation, and replacement for rock sized 1 cubic yard or greater
 - e. Hazardous material excavation, removal, or replacement.
 - f. Unsuitable material excavation, removal or replacement.
 - g. Milling and/or Reconstruction of Existing Roadways
 - h. Maintenance of Erosion Controls
 - h1. Preparation and repair of site for 10 year storm or greater.
 - h2. Dust Control
 - h3. Winter condition and related work.
 - i. Concrete encasement of Utilities
 - j. Controlled Density Fill and/or Flowable Fill
 - k. Infrared Asphalt Treatment
 - l. Repair to miss or unmarked utilities including but not limited to Sprinkler systems, ETC
Conduit and/or Wire, Gas, Water, Sewer, Septic or Drain, Fire Alarm
 - m. Relocation of interfering utilities
 - n. Repair of water and sewer mains and appurtenances should they be deemed insufficient for tapping and/or connection
 - n1. Third Party Chlorination, Pressure Testing, Vacuum Testing, Air Testing and/or Material Testing.
 - o. Asbestos Abatement, Oil Tank Cleaning and Removal
 - p. Fencing
 - q. Prevailing Wage Rates, Standby Time, Overtime Wage Rates
 - r. Landscaping Beyond Loam & Seed, Maintenance of Grass Seed
 - r1. Tree Protection
 - r2. Hardscape Work, Landscape Construction
 - s. Additional Conditions/Requirements by Street Opening Permits and/or Town Engineer
 - t. Signage
 - u. Police Detail and Traffic Control
 - v. Lighting
 - w. Excavation Dewatering Beyond that which would be handled using a single 3" "mud sucker" pump with zero treatment of discharge for siltation
 - x. Existing Utility and/or Grade Verification, Locating, and Protection
 - y. Shoring beyond vendor's four varying trench boxes.
 - z. Disposal Costs

4. Price based on [REDACTED], Inc. performing all utility work most efficient manner. This means all
5. trenches/excavations will be backfilled as the installation process moves along, This must be coordinated with all inspecting authorities. If an inspecting authority requires visual inspection of all components, then the inspector will need to be on site at all times.
6. This agreement is contingent upon the absence of strikes, accidents or delays beyond our control.
7. Price is based on the execution of the complete project without delay. Should the owner choose to postpone any portion of the project that portion not yet completed will be subject to renegotiation prior to remobilization. A list of material cost shall be provided upon contract execution. Escalation of material, fuel or labor cost resulting from owner delay will require an equitable increase in the contract.
8. There shall be no change to the provisions of this proposal without written confirmation of same by vendor.
9. Payment terms to be discussed.
10. [REDACTED], Inc. reserves the right to cease work if payment at these terms is not received in a timely manner.
11. Severance of this contract will require a payment equal to ten percent of the remaining work to cover efforts made by [REDACTED], Inc to perform the entire project in the most efficient scenario.
12. Any alteration or deviation from project specifications and or these terms involving extra costs will be executed only upon written orders and will become an extra over and above this contract. A Jones extra work memorandum slip or an approved change order shall constitute a written order.
13. Prices herein provided by [REDACTED] will remain firm until the completion of this project with the exception of asphalt material for pavement and fuel. Asphalt material pricing will be adjusted to comply with "Massachusetts Highway Department Monthly Price Adjustment for Hot Mix Asphalt (HMA) mixtures. Fuel pricing will be adjusted based on the Energy Information Administration Crude Oil per Barrel Spot Prices.
14. A finance charge of 1.5% per month will be applied to any overdue invoice. Legal fees incurred by Jones Contracting, Inc. for contract enforcement and payment collection shall be paid for in full by the project owner and general contractor.
15. The terms and conditions of this Agreement are absolutely confidential between the parties and shall not be disclosed to anyone else, except as shall be necessary to effectuate its terms. Any disclosure in violation of this section shall be deemed a material breach of this Agreement.





**Board of Health
TOWN OF NEEDHAM
AGENDA FACT SHEET**



MEETING DATE: 11/08/2019

Agenda Item	FY 2021 Budget Discussion and BOH Priorities
Presenter(s)	Timothy Muir McDonald, Director of Health & Human Services

1.	BRIEF DESCRIPTION OF TOPIC TO BE DISCUSSED
The Board of Health will review the FY2021 HHS Budget submission and discuss its priorities for funding to support the Public Health Division's operations and to advance the Board's goals and objectives.	
2.	VOTE REQUIRED BY BOARD OF HEALTH
No vote is required.	
3.	BACK UP INFORMATION ATTACHED
FY 2021 HHS Budget as submitted is attached for the Board of Health's review and reference.	

Department Information DSR1	
Department	Health & Human Services
Department Mission	
The Needham Department of Health & Human Services (HHS) provides programs and services that support and enhance the quality of life in Needham. HHS includes the following divisions: Aging Services, Public Health, Veterans' Services, and Youth & Family Services. Its mission is to protect, preserve, and promote the health, wellness, and social and emotional well-being of all Needham residents. * * * * *	
Aging Services Division	
<u>Mission:</u> The mission of the Aging Services Division is to provide a welcoming, inclusive, and secure environment where individuals and their families can benefit from services and resources that enhance their quality of life and provide opportunities for growth.	
Aging Services fulfills its mission by providing services at the Center at the Heights, as well as in community settings. The programs are designed to support adults aged 60 and older to live healthy and independent lives. Services include: outreach and counseling, advocacy, transportation, daily meals, information and referral, Medicare benefits counseling, volunteer opportunities, health & wellness information and screening, educational programs, and special events and trips.	
The Center at the Heights (CATH) is a 20,000 square foot, handicapped-accessible building which accommodates many programs. The facility includes: a large community room that seats up to 250 people, a fitness center, a cafeteria, an art room, a computer room, a library, several meeting rooms, and a roof deck. CATH promotes health and wellness by providing a place for Needham's older adults to socialize and participate in many recreational, health, educational, and social activities.	
<u>On the Horizon:</u> Needham's seniors are living longer and are becoming a larger proportion of the populations. With their growing numbers, older adults are presenting with a wide range of needs and interests. According to data from the U.S. Census Bureau, the number of people aged 65 years and older will reach 55 million by 2020. By 2030, there will be about 72.1 million older persons in the US who will make up roughly 20 percent of the U.S. population. The team at the Aging Services Division delivers comprehensive programs that promote the health and wellness of seniors 60 years of age and older. As the proportion of older adults increases, Aging Services will have to adjust programs to meet the growing needs.	
The Needham Council on Aging continues to support the needs of older residents and families through an eight dimensions of wellness approach, incorporating education, exercise, and entertainment in its programming. The eight dimensions of wellness are: emotional, environmental, financial, intellectual, occupational, physical, social, and spiritual. The Aging services Division continues the movement to improve the quality of life for Needham's older residents with Memory enhancement, Exercise, Music/art, Social, Education Support for caregivers.	

Department Information
DSR1

Department	Health & Human Services
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Budget Statement:

This year's base budget submission for the Aging Services Division reflects very modest increases for some line items. The largest increase is for wireless communications, which will allow mobile phones for the new Assistant Director and for the new vans that were purchased with state earmark funding. Costs for usage of the Aging Services Division vans (Vehicle Supplies and Gasoline) have been reduced slightly. Past usage increased at a slower rate than expected, despite a significant increase in programs and associated transportation costs (reflecting efficiencies in route planning and the timing of trips). As programs continue to increase and CATH's hours continue to expand, these costs categories will be closely monitored. Please also note that the Aging Services Division has a significant number of part-time and temporary staff members, many of which were affected by an increase in the Schedule C rates for some positions (notably Van Drivers and Building/Kitchen Monitor).

Aging Services Division

Line	Div.	Description	Change from FY20	Comments
Professional/ Technical Software License Fee	Aging Division	Annual license cost for Aging Program	(\$500)	Information Technology is absorbing these costs into its budget
Postage	Aging Division	Mailing	\$250	Reflects increased mailing costs for distribution of The Compass (newsletter)
Wireless Communications	Aging Division	Mobile Phones	\$1,300	Mobile phones for new Assistant Directors and new phone assigned to new COA handicap accessible Van
Office Supplies	Aging Division	Office Supplies	Unchanged	
Vehicle Supplies	Aging Division	Brakes, windshield wipers, etc.	(\$250)	Reduced by \$250 to better reflect anticipated vehicle maintenance costs.
Gasoline/ Diesel	Aging Division	Fuel	(\$500)	Reduced to better reflect anticipated usage
Seminars & Trainings	Aging Division	Trainings and registration costs	Unchanged	
Dues & Memberships	Aging Division	Memberships	Unchanged	
Conf In-State	Aging Division	Registration costs for	Unchanged	

Department Information DSR1					
Department			Health & Human Services		
		trainings			
Other Expenses	Aging Division	Transponder Charges	\$500	Reflect charges against vehicle transponder for tolls taken by COA Vans.	

The Aging Services Division submitted a DSR4 spending request to support the costs of evening and weekend programs, the design of *The Compass*, the Fitness Program, and transportation to support the new hours of programming and services. This is the second year of a multi-year request, and totals \$25,000 in expense costs and \$48,635 in salary costs, all of which are for part-time staff members. The benefit costs associated with those part-time staff members total \$4,935.

Grants and Donations:

The Aging Services Division relied upon two state/federal pass-through grants. It receives \$84,664 in funding for the SHINE program, which funds two 30-hour per week positions and supports the training of dozens of SHINE counselors. The Division also received \$77,976 in funding from the Formula Grant, which supported part-time staff members, programs, recreational supplies, furniture replacements, and upgrades for CATH technology. Those grants were supplemented by a \$90K earmark in the state budget (secured by Needham's legislative delegation led by Representative Denise Garlick) which supported the purchase of two new vans for the Aging Services Division (a six passenger mini-van, and a 7-passenger handicap-accessible van).

The Division received a substantial donation (greater than \$50K) from the Friends of the Center at the Heights in FY 2019, which supported the operation of the Fitness Program at CATH and which helped to support the expansion and mailing of the *Compass* newsletter six times per year. Additionally, FY 2019 was the first year of the substantial five-year (almost \$160,000) commitment that the Beth Israel Deaconess Hospital-Needham has provided to support senior health and wellness.

Volunteers:

The Aging Services Division relies upon a committed group of community volunteers to support the wide array of programs and services which Division provides to the community. Volunteers serve as SHINE Counselors, staff the front desk, answer phones, assist patrons with registering for classes, assist seniors with tax preparation, and assist in the kitchen with the congregate lunch program. There are nearly 150 volunteers in FY 2019, and those volunteers provided an estimated 8,000 hours of service.

Accomplishments and Activities:

Programs at CATH continually evolve to meet the needs of the growing number of older adults in Needham. In recent years well-attended programs have included exercise, meditation, Reiki, smoking cessation, nutrition, cooking, chronic disease management, and other health-focused topics. There are also support groups, creative arts activities, intergenerational programs, movies, and other entertainment.

Social workers provide a wide range of supportive services including: assistance in addressing problems with housing, transportation, utilities, and other concrete problems; supporting individuals struggling with depression, anxiety, grief, and loneliness; offering support groups;

Department Information DSR1	
Department	Health & Human Services
and working with public health nurses on the Safety at Home program. In FY 2019, the Aging Services Division expanded its programs and services into weekday evenings and piloted offering programs and services on Saturday mornings. The Division also implemented a once-a-month Wednesday breakfast program, which has been very popular. SHINE (Serving the Health Information Needs of Everyone) Counselors provided 7,572 counseling sessions with seniors about health insurance options. This worked saved an estimated \$2,000,000 through drug plan enrollments. Transportation services were expanded and transportation added routes to holiday shopping centers to give seniors the freedom to shop for their loved ones without needing to drive.	
On the Horizon	
Public Health <u>Mission:</u> The Needham Public Health Division is empowered through the Needham Board of Health by the Massachusetts General Laws to enforce state and local public health and environmental regulations. The mission of the Division is to prevent disease, promote health, and protect the public health and the social well-being of Needham residents, especially those who are most vulnerable. Public Health staff work toward fulfilling this mission through collaboration with state and local agencies and community partners. The work largely consists of promoting health practices based on research and evidence, enforcing local and state regulations, and advocating for policy and regulatory changes that promote health and well-being. <u>On the Horizon:</u> The Public Health Division and the Board of Health adapt programs and services as emerging issues or new research indicate needs. Recent examples of emerging issues have included concerns about concussions, the potential dangers of vaping, pest management, worrisome infectious diseases. For the coming fiscal year, the Public Health Division anticipates the end of a significant grant that has funded youth-focused substance use prevention. Staff members have been exploring options for maintaining this important work once the Federal funding is gone. <u>Budget Statement:</u> Public Health has been very successful in securing grant funding in numerous areas. Significant grants have supported several years of substance use prevention through the Substance Prevention Alliance of Needham (SPAN). This has allowed the Division to conduct school and community-based awareness programs, work with restaurants and stores with liquor licenses, and work with pharmacists on issues related to prescription drugs. However, the Drug Free Community grant, which has funded so much prevention work, will expire in September 2020, leaving Needham without dedicated youth substance use prevention funding. Smaller grants, ranging from \$1,400 to \$20,000, have supported programs such as elder fall-prevention, adaptation to climate change, initial efforts toward public health accreditation, innovations in sanitary code enforcement, emergency preparedness, and work supporting	

Department Information
DSR1

Department	Health & Human Services
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housing options for older adults.

This year's base budget submission from the Public Health Division reflects a modest cost increase of \$1,715. There is a \$250 reduction in general office supplies, but that savings is offset by the addition of \$250 for medical supplies to support the replacement of Stop the Bleed kits co-located with First Aid Kits and AEDs in Town buildings.

Software charges are transferred to the ITC budget, and service from Constant Contact is eliminated. There are small reductions in the funding for wireless communications and licensing charges, but a sizable increase in the cost of services for environmental monitoring of synthetic turf fields. The cost of testing has increased, and the Board of Health now requires that the testing examine not only crumb rubber in-fill and water runoff, but also PFAS chemical applications to the synthetic grass blades. The cost increase of \$2,500 in this line is based off of a preliminary estimate from an environmental testing company on state contract. Please also note that the Public Health Division has a significant number of part-time and temporary staff members, although only a small number of those staff members were affected by an increase in the Schedule C rates for some positions (notably Traveling Meals Program Summer Drivers).

Public Health

Line	Division	Description	Change from FY2020	Comments
Professional/ Technical Software License Fees	Public Health	Software costs for Survey Monkey and Constant Contact	(\$660)	Information Technology is absorbing the costs for Survey Monkey into its budget and those costs have increased slightly due to a change in the company's licensing; the contract with Constant Contact will be terminated
Professional/ Technical Licensed Professional	Public Health	Environmental Testing Services	\$2,500	Costs to cover the full-range of BOH-required environmental testing for new synthetic turf fields (added PFAS tests which nearly double previous cost)
Wireless Communications	Public Health	Mobile Phones	(\$75)	Monthly charges for mobile phones reduced.
Office Supplies	Public Health	General Office Supplies	(\$250)	Reduced costs to more accurately reflect the previous years' spending levels for office supplies

Department Information DSR1				
Department		Health & Human Services		
Medical Supplies	Public Health	Medical Supplies for Town Buildings	\$250	Updated to reflect costs of replacement of Stop the Bleed kits co-located with First Aid
Governmental Charges	Public Health	Licensing charges	(\$50)	Reduction in funding for required licenses
Mileage	Public Health	Mileage	Unchanged	
Conference Out-of-State	Public Health	Conferences & Trainings	Unchanged	

The Public Health Division has submitted two DSR4 budget requests, both of which are high priorities of the Board of Health. The top priority is the request for \$125,000 in funding to support the Substance Prevention Alliance of Needham (SPAN) when its federal grant expires in early FY 2021. The benefit costs for the personnel (one full-time staff member, one 19.5 hr/week part time staff member) in this budget request totals \$36,514, yet it is important to note that these benefit costs have been paid by the Town for the last decade, so this would not be a newly assumed cost.

The second priority is funding to support Public Health Division staffing with a Director for the Public Health Division (\$108,928 in salary costs), expanded hours for environmental health inspections from a part-time staff member (\$18,200 in salary costs), and the benefit costs for those personnel (\$36,866).

Grants and Donations:

Public Health has been very successful in securing grant funding in numerous areas. Significant grants have supported several years of substance use prevention through the Substance Prevention Alliance of Needham (SPAN). This has allowed the Division to conduct school and community-based awareness programs, work with restaurants and stores with liquor licenses, and work with pharmacists on issues related to prescription drugs. However, the Drug Free Community grant, which has funded so much prevention work, will expire in September 2020, leaving Needham without dedicated youth substance use prevention funding.

Smaller grants, ranging from \$1,400 to \$20,000, have supported programs such as elder fall-prevention, adaptation to climate change, initial efforts toward public health accreditation, innovations in sanitary code enforcement, emergency preparedness, and work supporting housing options for older adults. In FY 2019, the Public Health Division received \$125,000 for Drug Free Communities grant, \$100,000 for regional Substance Abuse Prevention Collaborative grant, approximately \$22,000 from the federal Food & Drug Administration for food safety projects, a \$10,000 smoking cessation grant, a \$26,089 climate resiliency for seniors grant, and a \$33,000 grant for community vulnerability assessment to climate change.

Volunteers:

The Public Health Division relies upon a committed group of community volunteers to support the Traveling Meals Program, which delivers two-meal packets to home-bound or vulnerable community members. Meals are cooked by the food program staff at the Beth Israel Deaconess Hospital-Needham; volunteers assist with packing the meals and then drivers deliver the meal packets to program recipients. There are approximately 40 program recipients and over 60

Department Information DSR1	
Department	Health & Human Services
volunteers. Those volunteers provided an estimated 1,850 hours of service in FY 2019. <u>Accomplishments and Activities:</u> Public Health plays a key role in several important community initiatives. The Community Crisis Intervention Team (CCIT) is a joint initiative of the Public Health Division and the Needham Police Department, which includes the Fire Department, the Aging Services Division, and Beth-Israel Deaconess Hospital-Needham. This group offers resources and support to Needham residents who are in crisis. Similarly, Public Health plays a leadership role with the Police Department in the Domestic Violence Action Committee, and co-chairs the Local Emergency Planning Committee with the Fire Department. During the 2020 fiscal year, the Environmental Health Unit successfully transitioned to the new food code and conducted well-received training for all food handlers, while continuing to manage and enforce regulations, permitting, and inspections in food establishments, housing, construction, waste management, hotels, swimming pools, among many areas. Environmental Health has also addressed emerging issues in cannabis, electromagnetic fields, and other concerns. Needham's Public Health Nursing Program, as the clinical arm of the Public Health Division, continued to provide expertise in communicable diseases, illness and injury prevention, and wellness. One very visible example of the nurses' work was the ongoing public education and response to concerns about Eastern Equine Encephalitis (EEE) during the summer of FY2020. The Public Health nurses offered monthly blood pressure clinics to residents and to Town employees and coordinated the annual flu clinics. The nurses also coordinated a range of assistance programs that help residents apply for assistance with utility bills, food stamp applications, and coping with ongoing issues such as housing problems, hoarding, and home safety. In addition to their annual CPR classes, the Public Health nurses also taught a new Stop the Bleed class in conjunction with the installation of kits throughout Town buildings. Public Health continued to manage contracts with Riverside Community Home Based Care (to provide services to high risk adults and seniors and for consultation to critical local committees addressing crisis intervention, domestic violence, and substance use) and with INTERFACE, a referral service for people seeking mental health services.	
Budget Statement	
Veterans Services <u>Mission:</u> The mission of the Veterans Services Division is to provide services determined by Massachusetts law including: the administration of benefits for veterans and their families who meet eligibility criteria; the care of veterans' graves, ensuring the burial of indigent veterans and their eligible family members; the ceremonial observance of national and state holidays dedicated to veterans and patriotic purposes; to take such actions as may be necessary to ensure the well-being of Needham's veterans; and to actively pursue available federal benefits for veterans and their families.	

**Department Information
DSR1**

Department	Health & Human Services
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Needham is a member of the West Suburban Veterans District, which was established in fiscal year 2010. The District also includes Wellesley, Weston, and Wayland.

On the Horizon:

Long-term challenges including providing support and services to the population of post-9/11 veterans in Needham and meeting the needs of a larger population of pre-9/11 veterans as they continue to age in our community. On the latter front, existing and new collaborations with the Aging Services Division on programs like a Veterans Writing Group have been a valuable arena for engaging veterans.

Budget Statement:

As a member of the West Suburban Veterans District (WSVD), Needham receives dedicated support for the administration of benefits and services to veterans and their families. There is a modest amount of additional funding available in the Veterans Services budget to support other programs and expenses.

Some of the funds spent on veterans benefits and other services are eligible for up to 75% reimbursement from the Commonwealth. The WSVD has not notified officially Needham of its FY 2021 Assessment. This base budget is preliminary, as the WSVD Board will begin its FY2021 budget discussions towards the end of the calendar year.

This budget was developed based on previous year's spending increases and the surplus that was available in FY 2019 from the two primary funding lines (Governmental Charges and Veterans' Benefits) and the projected spending levels in FY 2020. It reflects a modest reduction (less than 1%) in key budget lines.

Veterans Services

Line	Division	Description	Change from FY 2020	Comments
Governmental Charges	Veteran	District Assessment	(\$290)	Slight reduction in District Assessment costs
Mileage	Veteran	Mileage	Unchanged	
Veterans' Benefits	Veterans	Veterans' Benefits	(\$389)	Benefits Costs reduced slightly to better reflect anticipated expenses

There are no DSR4 budget requests for the Veterans Services Division.

Accomplishments and Activities:

During the last year there were over 2,400 American flags on the graves of Veterans in St. Mary's and Needham cemeteries. Veterans Services coordinated and operated the Memorial Day and the Veterans Day observations. Veterans and widows of veterans have been assisted in identifying and applying for benefits and services to which they are entitled.

Department Information DSR1	
Department	Health & Human Services
Accomplishments and Activities	
Youth & Family Services Division <u>Mission:</u> The mission of Needham Youth & Family Services Division is to provide leadership and a community focus on youth and family issues, and to promote community wellness by: advocating for youth and family interests; developing and implementing quality programs and services; educating and communicating with the public regarding youth and family issues; identifying and addressing youth and family needs; and partnering with other youth and family serving agencies. Needham Youth & Family Services operates as a mental health resource offering a wide array of confidential clinical and programmatic services to children, adolescents, and families. While the division's services are reaching more people and having a greater impact, it is clear that there is an escalating demand for services, and Youth & Family Services has worked diligently to construct meaningful programs designed to meet these needs. <u>On the Horizon:</u> Youth & Family Services has gone through many changes over the past year as many of the programs and services have been assessed and the development of strong community partners has started to develop. Over the next year, the division hopes to accomplish a number of initiatives, in addition to continuing to run past programs that the community has seen as so valuable. • Constantly assessing the community needs ensuring that the programs are addressing these appropriately and providing community members the necessary amount of support. • Address the vaping epidemic by creating a task force and increasing community involvement and planning. We have seen a drastic increased need for vaping awareness, prevention, education and cessation as 35% of Needham High School students and 7% of Middle School students report having used electronic vapor products. This number is steadily increasing in Needham and across all MetroWest regions. • Develop additional programs to address areas of depression, anxiety, suicidality as surveys have recently showed there is such a high need for this • Continue to train Youth Mental Health First Aid to all adult who have any contact with youth so that interventions can be implemented as early as possible. If the Town can be the forefront of have a high percentage of residents and staff trained, mental health crises will decrease, and everyone will be more prepared to intervene when necessary. This effort was initially supported by a grant, and this year is being supported by High Rock Church by organizing a 5K to build awareness and funds for this program. • As families and youth in crisis are increasing in frequency and intensity, additional crisis clinical supports are being implemented. • We are working on building relationships across other Town divisions – we have started running programs with the COA, school system and SPAN, work on crisis intervention with Police, Fire and Rescue and Public Health. In addition, the division is collaborating closely with a number of community organizations such as the Housing Authority, the YMCA, the	

Department Information
DSR1

Department	Health & Human Services
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Walker School, the clergy, the hospitals, Early Intervention and many others.

Due to the increased clinical responsibilities necessary to address the needs of the community, constant training and clinical consultation is necessary for all staff. Not only does this allow for the staff to stay current with successful therapeutic techniques and interventions, it also keeps them stimulated and allows for professional growth. Staff members who feel like they are being professionally supported are more likely to have longevity and higher efficiency which will further benefit the community.

Budget Statement:

The Youth & Family Services Division's base budget request includes modest cost increases to replenish/refurbish the Division's stock of therapeutic games and supplies, add a hotspot to the YFS Division Director's work phone, and to support the costs for program supplies, materials, and refreshments for programs aimed at low-income families. This is part of the Division's effort to expand the reach of its services and programs.

Youth & Family Services

Line	Div.	Description	Change from FY2020	Comments
Postage	Y&FS		Unchanged	
Wireless Communication	Y&FS	Cell phones	\$275	Increased cost for conversion to smart phone and an expanded data plan (Hotspot) for the Director.
Printing and Mailing	Y&FS		Unchanged	
Recreation	Y&FS		Unchanged	
Office Supplies	Y&FS		Unchanged	
Food & Services Supplies	Y&FS	Food supplies for programs	\$1,000	Increased costs for materials and access programs, including programs targeted for low income families
Other Supplies and Equipment	Y&FS	Publicity materials, resource cards therapeutic games and activities.	\$500	The cost for publication and advertising has increased and the budget has not kept up with these increased costs. This would enhance the level of outreach and additional therapeutic activities.
Conf Out of State	Y&FS		Unchanged	
Dues and Memberships	Y&FS		Unchanged	

**Department Information
DSR1**

Department

Health & Human Services

There are no DSR4 budget requests for Youth & Family Services within the Health & Human Services Department budget. A request for a total of \$4,000 was submitted as part of the Information Technology budget submission, which would support two small software applications for YFS – a registration program and a mental health case notes program.

Grants and Donations:

The Youth & Family Services Division received a \$20,000 grant from the MetroWest Health Foundation to support the implementation of Mental Health First Aid trainings in the community. Additionally, the Division also received small community donations from residents and modest size donations from businesses and community partners like the Needham Community Council. In FY 2019, donations totaled \$1,895.

Volunteers:

The Youth & Family Services Division engages youth in community-service and give-back activities throughout the year. The Peer Tutor program provides approximately 1,200 hours of service from more than three dozen high-school age tutors. The VIP program provides more than 300 hours of peer support, and Project VAN (Volunteers Around Needham) expanded its offerings and had service projects throughout the community over April school vacation in addition to the summer vacation.

Accomplishments and Activities:

The services provided by the division include direct clinical services to youth and families, educational outreach and support for families and youth, and involvement in community-based initiatives, groups and trainings. During the 2019 fiscal year, the Division provided several sessions of training for Town staff and for residents about Youth Mental Health First Aid.

Clinical service continues to be a strength of the division with the staff providing hundreds of clinical hours to Needham youth and their families. An effort to decrease the waitlist has paid off as there has been a significant drop in wait-time for clients. Other services have included school-based projects, wellness and prevention services, and babysitting training.

Youth & Family staff members have been active members of several town-wide committees addressing substance use prevention, domestic violence, as well as groups of peers from youth and family services in other communities.

Other accomplishments include:

- Youth and Family Services offers almost 1000 hours of clinical services each year to youth and families, in addition to providing crisis management when needed. Also imbedded in these clinical hours, the division offers Substance Abuse Awareness and a Behavior Intervention Program, both which have a specific curriculum to best intervene with youth struggling with substance use or behavioral difficulties.
- Over the past decade, the Needham community has grappled with critical youth issues such as loss, self-injury, depression, and anxiety. Youth & Family Services has responded by outreaching to youth, parents, and families in a variety of ways including individual meetings, group sessions, and the distribution of informational materials. In addition, the department was actively involved with groups such as the Needham Coalition for Suicide Prevention and the Substance Abuse Prevention Alliance of Needham (SPAN). A

Department Information DSR1			
Department		Health & Human Services	
significant number of staff hours were devoted to creating materials, meeting with community leaders and to directly assisting youth and/or their parents with a crisis. In February of 2018, there was a tragedy during which 2 High School students were killed after being hit by a car while crossing the street in a crosswalk. Youth & Family Services responded to this event and at the year anniversary, providing a significant amount of time and support to the students and the school. The division is also dedicating a tremendous number of hours teaching Youth Mental Health First Aid. • We engaged youth in wellness/prevention services such as the Peer Tutor Program (that provided over 1,200 hours of support to youth in the past year); VIP (that provided about 300 hours of support to youth in the past year; Needham Unplugged (in which hundreds of families participated); Project VAN which expanded this past year, offering services to the community during April break in addition to all of the summer projects; we trained 30 new babysitters through our Babysitting Training Seminar and Make A Statement Day (in which we had over 1,000 participated). • We continue to honor an adult in our community with the Patrick and Patricia Forde Good Person Memorial Award to acknowledge the contributions the recipient has made to the lives of youth in the Needham Community • We play a leadership role on the Needham Youth Resource Network by convening a large group of youth serving agency providers together each month to tackle the difficult circumstances and situations that some Needham youth and their families face. In addition, the division plays a role in CCIT (Community Crisis Intervention Team) which also discusses individuals and families in crisis and how the town can best support these individuals. Youth and Family Services provides a number of educational workshops in the schools, being part of the entire 6th, 7th, 8th and 9th grade. The workshops that are being presenting included information about safely surfing the internet, sexual harassment, the relation between social media, body image and self-esteem, and teen dating violence.			
Spending Request Recap			
Description	Base Request DSR2	Additional Request DSR4	Total (DSR2 + DSR4)
a) Salary and Wages	\$1,734,921	\$278,608	\$2,013,529
b) Expenses	\$392,885	\$47,155	\$440,040
c) Capital			
d)			
e)			
f)			
g) Total DSR2 & DSR4 Request (a through f)	\$2,127,806	\$325,763	\$2,453,569
V2021			

Department Expenditure Detail DSR2																	
Department				Health & Human Services													
Object				Description						Amount							
DSR2A																	
Permanent Personnel	Last Year (FY2019)			Current Year (FY2020)			Next Year (FY2021)										
	FT Head Count	PT Head Count	Full Time Equivalent (FTE)	FT Head Count	PT Head Count	Full Time Equivalent (FTE)	FT Head Count	PT Head Count	Full Time Equivalent (FTE)								
	15	6	17.66	15	4	17.14	15	4	17.67								
Non-Budget Personnel: Will the department rely on grant/revolving fund positions to provide services?						Yes	No	FT Head Count	PT Head Count								
						X		2	2								
Union Positions:		BCTIA		Fire A		Fire C	X	ITWA		NIPEA		Police		Police Superior		NA	
1. Salary and Wage Permanent Positions.																	
a. PRD1 Salary and Wages Base															\$1,419,858		
b. PRD1 Differentials (Conditions, Requirements, Shifts)																	
c. PRD1 Education																	
d. PRD1 Extra Holiday																	
e. PRD1 Longevity															\$5,149		
f. PRD1 Snow Program																	
g. PRD1 Uniform																	
h. PRD1 Other Compensation																	
i. PRD1 Budget Adjustments															\$5,481		
PRD1 Sub Total																	
J DSR3 Other Compensation																	
Sub Total 1															\$1,430,488		
2. Salary and Wage Seasonal & Temporary Positions (Itemized Below)																	
a. Aging Services – Recording Secretary at \$2,960 plus DSR3 costs listed below															\$2,960		
b. Public Health – Temp office coverage at \$3,500, Recording Secretary at \$2,960, After hours inspections at \$14,110, and Program Support Assistants at \$36,525, also includes the date gathering, plus DSR3 costs listed below															\$57,095		
c. Veterans – Care of Graves at \$2,500 and Seasonal Assistance at \$500															\$3,000		
d. Youth Services – Part-time Social Workers at \$40,730 and Recording Secretary at \$2,960															\$43,690		
e. DSR3 Total															\$174,088		
Sub Total 2															\$280,833		
3. Salary and Wage Overtime (Itemized Below)																	
a. Scheduled Overtime (contractually obligated)															\$3,000		
b. Training and Development															\$0		
c.																	
d.																	
e. DSR3 Total																	
Sub Total 3															\$3,000		
4. Other Salary and Wage Expenses – (Itemized Below)																	
a. Incentive Programs																	
b. Pay In Lieu of Accrued Leave															\$12,100		
c. Program Stipend															\$8,500		
d. Tuition Reimbursement																	
e. Working Out of Grade																	

Department Expenditure Detail DSR2		
Department	Health & Human Services	
f. DSR3 Other Compensation		
	Sub Total 4	\$20,600
5. Total Salary and Wages (1+2+3+4)		\$1,734,921
DSR2B		
Object	Description	Amount
Energy (521x)		
Repairs & Maintenance Services (524x – 525x)	5245 – Maintenance @ \$500) Maintenance and Calibrations on Monitoring Equipment for Environmental Health Inspections needed every other year. This is an on-year for equipment calibration. (PH)	500
Rental & Leases (527X)		
Other Property Related Services (529x)	5290 – Pest Control @ \$500 (PH)	1,900
	Veterans' Event \$1,400 (Vet)	
Professional & Technical Services (530x – 531x)	5300 – Professional & Technical @ \$28,000 for data surveys, technical consultant (PH) 5300 – Professional & Technical @ \$8,500 for group activities (Youth) 5300 – Professional & Technical @ \$8,000 for group activities (Aging) 5303 – Seminars & Trainings @ \$2,000 (PH) 5303 - Seminars & Trainings @ \$2,000 (Aging) 5303 – Seminars & Training @ \$1,800 (Youth) 5309-Licensed Professional Services @ \$87,500 (Riverside, Fuss & O'Neil, etc.) (PH); 5311 – Advertising of flu clinics, public health forums, healthy notes @ \$2,500 (PH)	140,300
Communications (534x)	5340 – Graphic Design @ \$2,000 to support the design of community education materials and public health awareness campaigns (PH)	28,150

**Department Expenditure Detail
DSR2**

Department	Health & Human Services
	5341 – Postage @ \$1,500 for mailing permits and licenses and renewal applications (PH) Postage @ \$2,500 (Aging) Postage @ \$100 (Vet) Postage @ \$1,000 Youth 5344 – Wireless Communications @ \$4,925 covering costs of smart phones for Director, two Public Health Nurses, Assistant Director, Environmental Health Agent, Substance Use Prevention Specialists, smart phone for Traveling Meals Program Coordinator, as well as three IPADS for Environmental Health (PH) Wireless Communications @ \$4,250 covering costs of smart phones and data plan for Director and one of two van drivers (Aging) Wireless Communications @ \$1,975 covering costs of smart phone and data plan for Director (Youth) 5345 – Mailing, Printing, and Photocopying @ \$3,250 for both internal (photocopier) and external printing (includes copying of inspection forms, business cards, and posters) (PH) Mailing, Printing, and Photocopying @ \$2,250 for external printing, includes printing of certain program flyers or materials that cannot be produced “in-house” as well as business cards (Aging) Mailing, Printing, and Photocopying @ \$400 for external printing of brochures and program flyers or materials that cannot be produced “in-house” as well as business cards (Youth) 5347 - Legal Notices @\$4,000 for mandated posting of Board of Health

**Department Expenditure Detail
DSR2**

Department	Health & Human Services	
	regulations...everytime the BOH adopts a new regulation or revises an existing regulation there is a two-week public notice period pre-hearing and at least a one week posting period post hearing, which costs at least \$657 to post in the Needham Times and Hometown Weekly (PH)	
Recreational & Cultural Services (535x)	Memorial Day Luncheon \$500 (Vet) Program instructors or vendors @ \$28,000 (Aging)	28,500
Other Purchased Services (538x)	5380 – Nuisance Abatement @ \$1,000 (PH)	1,000
Office Supplies (542x)	5420 – Office Supplies and equipment for 6 full time, 3 part-time regular, and 10 part-time/per diem employees, as well as for three committees – Domestic Violence Action Committee, Coalition for Suicide Prevention, and Local Emergency Planning Committee @ \$4,000 (PH) Supplies and equipment necessary for the program and service delivery such as but not limited to paper, pens, files, labels @ \$3,000 (Aging) To purchase basic office supplies --- paper, pens, folders, mailers, etc @ \$800 (Youth) Office Supplies @ \$100 (Vet)	7,900
Building & Equipment Supplies (543x)		
Custodial Supplies (545x)		
Grounds Keeping Supplies (546x)		
Vehicular Supplies (548x)	Parts such as tires, brakes, batteries, inspection stickers for Aging Vans @ \$2,750 (Aging)	2,750
Gasoline and Diesel Fuel (5481)	Gas and oil for the Aging Vans @ \$9,500 (Aging)	9,500
Food and Service Supplies (549x)	Supplies related to program operation @ \$300 Aging and @ \$2,200 Youth	2,500
Medical Supplies (550x)	5500 – Medical Supplies and health materials, largely for public health nursing purposes @ \$1,750 (PH) Supplies related to medical purposes	1,900

Department Expenditure Detail DSR2		
Department	Health & Human Services	
	such as first aid kits @ \$150 (Aging)	
Public Works Supplies (553x)		
Other Supplies & Equipment (558x)	5580 – Other Supplies & Equipment @ \$7,175 Other Supplies & Equipment @ \$2,175 for Wellness Supplies (examples include Stress Balls, Hand Sanitizer Kits) and unexpected expenses like the purchase of Sharps Disposal Containers to be provided free of charge for residents with limited resources and the purchase of water bottles as gift to sports coaches that attended a concussion training offered by the Public Health Department. (PH) Flags and Holders @ \$4,000 (Vet) For a variety of expenses including program materials, off-site printing, etc. To purchase books, manuals, and literature regarding youth/family issues and treatment @ \$3,250 (Youth) Special Event and Public Recognition Expenses @ \$1,750 (Aging)	11,175
Governmental Charges (569x)	5690 – Governmental Charges for the annual cost for Environmental Health Agent licensure for MA Division of Professional Licensure for Environmental Health Agent and for Public Health Specialist @ \$200 (PH) West Suburban Veterans' District Assessment @ \$82,500 (Vet) Licensure for Social Workers @ \$800 (Youth)	83,500
Travel & Mileage (571x – 572x)	5710 – In-State Travel Expenses @ \$2,500 for in-state registration fees (PH) In-State Travel Expenses @ \$1,000 for in-state registration fees (Aging) In-State Travel Expenses @ \$1,500 for	19,500

**Department Expenditure Detail
DSR2**

Department	Health & Human Services	
	in-state registration fees (Youth) 5711 – Mileage @ \$3,500 for 6 full time, 3 part-time regular, and 10 part-time/per diem employees (PH) Mileage @ \$1,300 (Youth) Mileage @ \$1,100 (Aging) Mileage @ \$100 (Vet) 5720 – Out-of-State Travel Expenses @ \$3,000 for the cost of attendance for one staff member at regional or national event such as training (Youth) Out-of-State Travel Expenses @ \$5,500 for the cost of attendance for one staff member at regional or national events and trainings such as National Association of County and City Health Officials Annual Meeting or the CADCA Leadership Institute in Washington D.C (PH)	
Dues & Subscriptions (573X)	5730 – Dues & Subscriptions for Departmental and staff membership in professional associations and organizations, including the MA Environmental Health Association, the National Association of Local Boards of Health, and the Community Anti-Drug Coalitions of America @ \$2,750 (PH) Professional Subscriptions such as National Association of Social Workers \$1,500 (Aging) Veterans' Association @ \$60 (Vet) Professional Subscriptions @ \$1,000 (Youth)	5,310
Other Expenses (574 X – 579x)	5740 – \$500 for Transponder charges for COA Vans (Aging)	48,500

Department Expenditure Detail DSR2				
Department	Health & Human Services			
	Veterans' Benefits @ \$48,000 (Vets)			
6. Total Expenses			392,885	
DSR2C				
Capital Equipment Replacement (587X)			0	
7. Total Operating Budget Capital			0	
8. Total Base Request (Line 5 + Line 6 + Line 7)			2,127,806	
Does the Department depend on any Federal or State grants to provide services?	YES	X	NO	
Did the Department submit any requests for FY2021 for the replacement or upgrade of technology or software to the Information Technology Center?	YES	X	NO	
Did the Department submit any requests for FY2021 to the Department of Public Works/Building Maintenance division to improve or upgrade a public building or facility?	YES		NO	X
V2021				

Department Personnel Supplement DSR3							
Department		Health & Human Services					
	Description	Amount	Amount Reflected DSR2A Section				
			1	2	3	4	
1	Kitchen Assistant/Building Monitor at \$19,140	\$19,140		X			
2	Program Support Assistant III (15.0 hrs - Saturdays)	\$28,710		X			
3	Program Support Assistant II (10.0 hrs - Evenings)	\$11,670		X			
4	Van Drivers (two at 19.5 hrs, one at 7.5 hrs)	\$48,360		X			
5	Per Diem and Substitute Nurses	\$55,840		X			
6	Traveling Meals Program Summer Drivers	\$10,368		X			
7							
8							
9							
10							
11							
12							
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14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
I	Total	\$174,088					
Sections							
	Amount Reported Under DSR2A Section 1						
	Amount Reported Under DSR2A Section 2						
	Amount Reported Under DSR2A Section 3						
	Amount Reported Under DSR2A Section 4						
II	Total						

Performance Improvement Funding Request DSR4				
Department	Health & Human Services/ Public Health Division			
Title	Substance Prevention Alliance of Needham (SPAN)	Priority	1	
DSR4				
Expenditure Classification	FTE	Frequency Recurring Amount (A) One Time Only Amount (B)		Total Amount (A + B)
1. Salary and Wage	1.5	\$102,845		\$102,845
2. Expense		\$22,155		\$22,155
3. Operating Capital				
4. Department Total (1+2+3)		\$125,000		\$125,000
5. Other Costs		\$36,514		\$36,514
6. Grand Total (4+5)		\$161,514		\$161,514
Budgetary Considerations				Yes No
Does this request address a goal of the Select Board or other Board or Committee?				X
If yes, which Board or Committee?		Board of Health		
Has this request been submitted in the last three fiscal years and not funded?				X
Are there additional costs to implement this request (except for future year operating costs which would be ongoing if funding is approved) which are NOT included in this request?				X
Will the assistance of another department be required to provide support (personnel or financial) for this request to be implemented?				X
Will additional staff (beyond the staff requested in this DSR4 submission) be required if the request is approved?				X
Does the request support activities which produce revenue for the Town?				X
If the request is not approved, will current Town revenues be negatively impacted?				X
Is there an increased exposure for the Town if the request is not approved?				X
Is specialized training or licensing required (beyond the initial purchase)?				X
Does this request address a documented health or safety issue?				X
All "YES" responses above must be explained in the narrative below				
Description and Explanation				
Needham youth face many challenges related to substance use which may impact their health and well-being. The 2018 MetroWest Adolescent Health Survey results show: • Electronic vaping has increased from 16% in 2016 to 23% in 2018. • Marijuana use has increased. One fifth of Needham youth reported current marijuana use in 2018, compared to 16% in 2016. • Since the first administration of the survey in 2006, results have consistently shown that the prevalence of marijuana use increases over the high school years. • Self-reported binge drinking remains a problem. The percentage of binge drinking has remained at 19% from 2016 to 2018. Mission and Current State The Substance Prevention Alliance of Needham (SPAN) incorporates a collaborative, community-based, and data-driven approach to reduce alcohol, marijuana, and other drug use among Needham youth. SPAN offers Needham residents education, support, and resources to				

**Performance Improvement Funding Request
DSR4**

Department	Health & Human Services/ Public Health Division		
Title	Substance Prevention Alliance of Needham (SPAN)	Priority	1

address substance use and misuse among youth.

For the past ten years, SPAN has received funding from the US Substance Abuse and Mental Health Services Administration (SAMHSA) under its Drug Free Communities grant program. SPAN received \$125,000 in FY2020. When the grant expires in September 2020, Needham will have received a total of \$1.25M over a decade. However, the termination of that grant will leave the Town without a dedicated source of funding to support youth substance use prevention. Funding for SPAN is essential in order to continue addressing substance use among Needham youth.

Prior Activities and Accomplishments

SPAN has led many successful initiatives to address youth substance use in Needham. Data from the adolescent survey includes:

- Alcohol use among Needham High School students declined substantially: from 2006 to 2018, reported lifetime use decreased from 66% to 49%; current use from 28% to 19%.
- Lifetime prescription drug misuse has decreased from 11% in 2006 to 4% in 2018.

SPAN has several projects that have influenced the decreases in youth substance use rates:

- **Education and Awareness**
 - o SPAN conducts educational forums along and other activities to raise awareness about youth substance use. Topics have included vaping, underage access to alcohol, marijuana legalization, and opioids.
 - o An average of 100 community members attended forums in 2018 and 2019.
- **Policy**
 - o Policy and enforcement efforts have included alcohol licensee compliance checks with the Needham Police Department. These visits ensure licensees are following state and local regulations regarding underage alcohol service.
 - o SPAN supports a diversion program which helps Needham youth facing juvenile charges avoid prosecution.
- **Programs**
 - o Medication Disposal: SPAN works with Needham Police to host semiannual Drug Take Back Days. SPAN also worked with Beth Israel Deaconess-Needham hospital to add a medication disposal kiosk.
 - o Students Advocating Life Without Substance Abuse (SALSA): SPAN supports a club at Needham High School where high school students teach refusal skills and other prevention strategies to middle school students. Since its inception seven years ago, over 3,000 eighth grade students have participated in the program.
 - o 5th Quarter: For over a decade, SPAN has hosted this popular social program at the end of home football games in order to provide a healthy, fun, and substance-free environment for the students. Each event has attracted 200 to 300 students.
 - o Hidden in Plain Site: An interactive display of a teenager's bedroom which contains common items that can hide substances shows parents how to spot signs of risky

**Performance Improvement Funding Request
DSR4**

Department	Health & Human Services/ Public Health Division		
Title	Substance Prevention Alliance of Needham (SPAN)	Priority	1

behavior in their teens.

Elected Board Goals

Continuation of SPAN will achieve the Board of Health's FY19- FY20 Substance Use Prevention Goal #1: *Identify and acquire stable local funding to support Needham's substance use prevention activities and the Substance Prevention Alliance of Needham (SPAN) in light of the expiration of a 10-year federal Drug Free Communities grant in 2020.*

Budget

SPAN plays an essential role in preventing and reducing youth substance use and in supporting Needham families. SPAN has contributed to decreases in youth use of alcohol and prescription drugs. To ensure continuation of this important work, the Public Health Division requests funding for staffing and associated expenses.

Staffing: \$105,000 is requested for a full-time Program Director and a part-time Program Coordinator.

Position	Grade Level	Annual Salary / Rate
Senior Substance Use Prevention Program Coordinator	GE - 20 scale	\$74,568
Project Coordinator	Program Support Asst. III	\$28,277
Total		\$102,845

Description:

The Senior Substance Use Prevention Program Coordinator manages all aspects of the substance prevention work, including data collection, project coordination, community relations, membership recruitment and engagement. The Project Coordinator supports community initiatives including coalition communications, research, mobilizing volunteers, and coordinating coalition logistics.

Expenses: \$22,155 is requested to support evaluation and data collection, office supplies, program marketing, professional development and travel.

Expenses	FY 2021
Program evaluation, reporting, and data collection	\$8,000
Educational materials and publicity	\$8,000
Office and Other Supplies	\$1,000
Wireless Communications	\$750
Community education; staff training and development	\$4,155
Total	\$22,155

**Performance Improvement Funding Request
DSR4**

Department	Health & Human Services/ Public Health Division		
Title	Substance Prevention Alliance of Needham (SPAN)	Priority	1

Description:

- Program evaluation will be conducted with a consultant and will include analyzing program efforts and outcomes, analyzing data from the adolescent survey, and generating reports. A consultant will also be employed to implement and evaluate a survey of parents of children in 6th through 12th grades as a complement to the student survey.
- Educational material and publicity costs will include graphic design services and printing of brochures, flyers, and website updates.
- Community education and staff training includes: membership in the Community Anti-Drug Coalitions of America; training and development of SPAN volunteers and staff, especially in evidenced-based approaches to youth substance use prevention.

Scope of substance prevention work:

Over the years SPAN has worked to keep its cost low while providing comprehensive, high quality programs for Needham.

SPAN would like to continue offering the safe, substance free social events (the 5th Quarter) for teens, and the community education awareness events that address the risks of youth substance use along with strategies to prevent such use.

With the end of the Drug Free Communities grant, there is some opportunity to expand SPAN's scope beyond restrictions imposed by the Federal government. The Public Health Division looks forward to addressing substance prevention work beyond youth to include adults during their college and working years, as well as older adults. The Public Health Division will continue to pursue grant opportunities, fundraising, and community support through in-kind services. SPAN will also leverage resources through partnerships with other Town departments and community partners.

V2021

Performance Improvement Funding Request Supplement DSR4S										
Position Title	Senior Substance Use Prevention Program Coordinator						Priority	1		
Classification	X	FT		PT		Seasonal				
Part Time /Seasonal	Hours Per Week						Number of Weeks Per Year			
Compensation Detail										
Base Rate	\$74,568									
Other										
Other										
Other										
Other										
Other										
Other										
Other										
Other										
Salary and Wage Total							\$74,568			
If Funded the Position Will Require the Following Additional Items										
Description	No	Yes	Explain			Start Up Cost \$		Annual Recurring Cost \$		
Workstation	X		Workstation already present, current grant-funded position.							
Vehicle	X									
Computer	X		Ibid.							
Software	X		Ibid.							
Mobile Communication Device	X		Ibid.							
Uniform	X									
Tools	X									
Equipment	X									
Other										
Other										
Other										
Totals										
Estimated Annual Benefit Cost								\$34,339		
Description and Explanation										
The Senior Substance Use Prevention Program Coordinator manages the substance use prevention program which is currently funded by the Drug Free Communities (DFC) grant. This program, which has been grant-funded for the past 10 years, provides substance education to Needham youth and parents with emphasis on prevention of substance use among youth. With the grant expiring, Town funding is needed to continue the important work of the Substance Alliance Prevention of Needham (SPAN). Substance use prevention is an ongoing need that responds to changing community conditions; funding this position will allow SPAN to continue the important ongoing work (such as, Drug Take Back Day, SALSA and 5th Quarter events) and to be responsive to emerging needs.										

Performance Improvement Funding Request Supplement DSR4S			
Position Title	Senior Substance Use Prevention Program Coordinator	Priority	1
If this budget request is approved, this currently grant-funded position would continue without interruption. The current occupant of the grant-funded position already has a workstation and other startup items noted above.			
			V2021

Performance Improvement Funding Request Supplement DSR4S									
Position Title	Substance Use Prevention Program Support (PSA III)					Priority	1		
Classification		FT	X	PT		Seasonal			
Part Time /Seasonal	Hours Per Week		19.5		Number of Weeks Per Year			5 2	
Compensation Detail									
Base Rate	\$28,277				\$27.78 x 19.5 hours per week x 52.2 weeks				
Other									
Other									
Other									
Other									
Other									
Other									
Other									
Salary and Wage Total					\$28,277				
If Funded the Position Will Require the Following Additional Items									
Description	No	Yes	Explain		Start Up Cost \$		Annual Recurring Cost \$		
Workstation	X		Workstation already present, current grant-funded position.						
Vehicle	X								
Computer	X		Ibid.						
Software	X		Ibid.						
Mobile Communication Device	X								
Uniform	X								
Tools	X								
Equipment	X								
Other									
Other									
Other									
Totals									
Estimated Annual Benefit Cost									
							\$2,175		
Description and Explanation									
This part-time position works on youth substance use prevention and is supervised by the Senior Substance Use Prevention Program Coordinator. This position supports the efforts of SPAN and the Sr. Substance Use Prevention Program Coordinator, and coordinates focus groups, recruits community volunteers, and coordinates program evaluation and reporting. If this budget request is approved, this currently grant-funded position would continue without interruption. The current occupant of the grant-funded position already has a workstation and other startup items.									
V2021									

Performance Improvement Funding Request DSR4				
Department	Health & Human Services/ Public Health Division			
Title	Program and Service Expansion at the Center at the Heights	Priority	2	
DSR4				
Expenditure Classification	FTE	Frequency Recurring Amount (A) One Time Only Amount (B)		Total Amount (A + B)
1. Salary and Wage	1.0	\$48,635		\$48,635
2. Expense		\$25,000		\$25,000
3. Operating Capital				
4. Department Total (1+2+3)		\$73,635		\$73,635
5. Other Costs		\$4,935		\$4,935
6. Grand Total (4+5)		\$78,570		\$78,570
Budgetary Considerations				Yes No
Does this request address a goal of the Select Board or other Board or Committee?				X
If yes, which Board or Committee?		Council on Aging, Select Board, Board of Health		
Has this request been submitted in the last three fiscal years and not funded?				X
Are there additional costs to implement this request (except for future year operating costs which would be ongoing if funding is approved) which are NOT included in this request?				X
Will the assistance of another department be required to provide support (personnel or financial) for this request to be implemented?				X
Will additional staff (beyond the staff requested in this DSR4 submission) be required if the request is approved?				X
Does the request support activities which produce revenue for the Town?				X
If the request is not approved, will current Town revenues be negatively impacted?				X
Is there an increased exposure for the Town if the request is not approved?				X
Is specialized training or licensing required (beyond the initial purchase)?				X
Does this request address a documented health or safety issue?				X
All "YES" responses above must be explained in the narrative below				
Description and Explanation				
This is the second year that the Health & Human Services Department has submitted a budget request to expand the programs, services, and hours of operation at the Center at the Heights (CATH). Last year, just over 50% of the requested funding was approved. This year's request was revised in light of that funding support and incorporates additional staff insight and input from the Council on Aging board members on the need for a continued expansion of programs, services, and hours. It is anticipated that this will be the second year of a combined three year request. In 2013 the Aging Services Division moved from a sub-standard space in the basement of the Stephen Palmer Building into the Center at the Heights (CATH), more than tripling the available space for programs and services. The move into a much larger space did not, however, come with additional staffing or financial resources, and in the interim the Aging Services Division staff has endeavored to expand programs and services to keep up with the increased demands of Needham's aging population.				

Performance Improvement Funding Request DSR4			
Department	Health & Human Services/ Public Health Division		
Title	Program and Service Expansion at the Center at the Heights	Priority	2
Usage of the Center at the Heights has increased as the Aging Services Division expands its classes, trainings, events, and services. The total count of daily guests is a rough measure of how active and vibrant CATH is, and from FY 2018 to FY 2019 the average number of daily guests increased by 29% and totaling 180 daily guests. The first three months of FY 2020 have seen slower growth, but the count of daily guests has continued to increase by a modest 5% and is now 190 guests per day. Some highlights which show the continued progress in programmatic activity are: • The Fitness Center saw a 32.1% increase in participant hours between FY 2018 and FY 2019, increasing from an average of 2011 hours per month to 2,656 hours per month; • Participation in Social Events like cooking classes, the Halloween Party, and the mocktail Sing-Alongs increased by more than 18% between FY 2018 and FY 2019, totaling more than 129,000 participant hours in the most recent fiscal year; • Participant hours spent watching classic movies dropped 12% between FY 2018 and FY 2019, representing a decrease of more than 330 participant hours;¹ and • Overall participant hours across all program categories increased by 12.45% between FY 2018 and FY 2019, representing an additional 21,000+ hours that seniors spent engaged in programs or using the services at CATH. Social work, client support, and mental health services have also expanded significantly over the last fiscal year. Case management services include financial support, resource gathering, referrals, and home visits for seniors in need, and the hours committed to those functions increased 39% and represented 2,634 hours of direct client service time. Part of the reason for this increase was the Aging Services Division conducted additional outreach to, and provided additional support for, the families of seniors and other residents in need (all-age) for which there are not dedicated Town resources. Group support includes caregiver support groups, respite support groups (which includes both the support group for the caregiver as well as the care and supervision of the client in need), and other classes such as grief support. The demand for these services increased markedly from FY 2018 to FY 2019, increasing from an average of just under three hours per month in FY 2018 to 10 hours per month in FY 2019. The Aging Services clinicians are involved in CCIT, or Community Crisis Intervention Team. CCIT is multi-disciplinary group of Town and state agencies along with community partners. CCIT meets monthly to address the highest need residents or those residents experiencing crisis. Examples of a resident in crisis might include an individual or family who has experience domestic or intimate partner violence, or a family dealing with the substance use of a loved one. As the CCIT has become better established in the Needham community, additional referrals have been provided to the Needham Police Department and to the clinical team at the Aging Services Division. In many instances, a CCIT referral to the clinical team opens the door			

¹ It may seem odd to highlight a decrease in hours, but the fact that fewer residents attended classic and contemporary movie screenings, when combined with the sharp increase in overall participant hours, means that there are additional programs and more compelling programs that are pulling seniors away from the TV/movies.

Performance Improvement Funding Request DSR4			
Department	Health & Human Services/ Public Health Division		
Title	Program and Service Expansion at the Center at the Heights	Priority	2
to a range of supports and services including the aforementioned support groups, state-mandated treatments (i.e. sections), legal assistance, and others. The demand for transportation services has grown in-line with the expansion of programs and social work services. As the Aging Services Division has increased the number of programs offered at CATH, the Division has expanded the times when programs are offered to include evenings and select Saturdays as part of a pilot program, and has offered a number of new transportation options to make sure those programs are accessible to the broadest possible group of Needham's seniors. As a result of the strong emphasis on programming, transportation has continued to increase. The total number of rides provided increased 8% between FY 2018 and FY 2019. The total number of clients served by the transportation program increased 35%; 263 individual residents received transportation assistance from the Aging Services Division in FY 2019. There was also a 76% increase in the number of clients participating in different transportation activities—this is one of the Aging Services Division's most important metrics and it indicates that more of the seniors are relying upon our transportation program for rides and are expanding the number and types of programs in which they participate.² The increased demand for programs, support services, and transportation should come as no surprise, given that Needham has one of the highest populations of adults age 60 and over in the MetroWest region. According to demographic information maintained by the Needham Town Clerk, in 2015 fully 24.4% of the town's population (a total of 7,455 residents) are age 60 and above; and this age group represents a great and growing proportion³ of all Needhamites. The number of 60-plus Needham residents has increased by more than 700 over the past two years alone, and that age cohort is projected to grow by 14.9% in Needham over the next five years according to the McCormack School at UMass Boston. By 2020, residents age 60 and older will represent 27.1% of the Town's residents, and a decade later will hit 31%. After two decades of growth that aligned with the Town's overall population trend, by 2010 Needham's senior population began growing both absolutely and in relation to the Town's overall growth rate. <u>Budget</u> This funding request represents an opportunity for continued expansion of the programs and services provided by the Aging Services Division. This expansion would be supported by significant additional funding for the Fitness Program at the Center at the Heights and by the addition of two new, part-time positions: a program assistant with primary responsibility for designing and producing the Aging Services Division's <i>Compass</i> newsletter, and an additional Van Driver to support the continued expansion of evening and weekend hours at CATH.			

² For example, if a senior receives daily transportation to the Center at the Heights he or she is counted amongst the unique clients served. But if that senior then decides to participate in our grocery shopping program, he or she is counted once per activity. This measure shows seniors, especially seniors who rely upon transportation, are taking advantage of more of the rides and programs made available to them.

³ McCormack Graduate School of Policy and Global Studies at the University of Massachusetts Boston and its Center for Social and Demographic Research on Aging. Demographic fact sheet available at: https://www.umb.edu/editor_uploads/images/centers_institutes/center_social_demo_research_aging/Dem_Brief_2.pdf And Dataset available at: https://www.umb.edu/editor_uploads/images/centers_institutes/center_social_demo_research_aging/Projections_by_MA_town_2010_2030_1.xlsx

Performance Improvement Funding Request
DSR4

Department	Health & Human Services/ Public Health Division		
Title	Program and Service Expansion at the Center at the Heights	Priority	2

Program Planning and Design of The Compass: this request would fund one part-time staff member in the Aging Services Division. A 19.5 hour per week Program Support Assistant III would be responsible for planning, developing, and scheduling a range of programs and would have primary responsibility for developing and designing *The Compass*, the Aging Services Division's newsletter. At 32 pages, *The Compass* is tied for the biggest senior center newsletter in the state, which is a reflection of the wealth of programs, classes and services which are offered at CATH. Thanks for a unique arrangement with LPI Publisher, there is no cost to Needham for printing *The Compass* and the total print run each month has increased substantially.

That agreement saved the Aging Services Division and the Friends of the Center at the Heights (which provided financial support for those costs not covered by the Town) \$4,000 per issue for a total of \$24,000 during FY 2019. It also has allowed for *The Compass* to be mailed to every address in Needham where a senior resides, greatly expanding the reach of *The Compass* and encouraging new seniors to come to CATH and join in the community there.⁴ While the Aging Services Division has increased (and will continue to increase) its use of social media and electronic advertising, a printed brochure is still the most effective way to reach the senior population in Needham.

The tradeoff for the larger size of *The Compass* and for its expanded reach⁵ is that the Aging Services Division is now responsible for the editing, formatting, and graphic design of each issue. And thus the need for a dedicated staff member to support that important work. The Program Support Assistant III would be working 19.5 hours per week at \$27.78 per hour for an annualized salary of \$28,277. The benefits costs for a 19.5 hr/week Program Support Assistant III total \$2,175.

The *Senior Transportation* budget request exists to provide Needham's seniors with the ability to participate in the full range of the Aging Services Division's programs in the evenings and on weekends. The additional part-time Van Driver funded in FY 2020 has allowed for greater access to transportation in the late afternoons and early evenings, and additional funding would support transportation for participants in the expanded evening programs (on Mondays through Thursdays) and for the transition from one Saturday a month to three Saturdays a month beginning in August 2020. If approved, this would support an additional Van Driver working 19.5 hours per week at a rate of \$20.00 per hour for an annualized salary cost of \$20,358. The benefits costs for a 19.5 hr/week Van Driver total \$2,760.

The *Fitness Program and Activities* budget request would bridge the gap between the resources needed to operate the Fitness Program at CATH and the amount of Town funding provided. The total cost to operate the CATH Fitness Program is about \$95,000 in FY 2020 and will increase to just over \$110,000 per year for FY 2021 and 2022 based on the winning bid in the three-year Request for Proposals (RFP), conducted in October 2019. Those costs are based upon the expanded Fitness Program, including weekday evenings and Saturday mornings, that is the

⁴ *The Compass* is now received in 5,500 approximately households, where it previously was only mailed to 800 addresses.

⁵ That is a nearly six-fold increase (587.5%).

**Performance Improvement Funding Request
DSR4**

Department	Health & Human Services/ Public Health Division		
Title	Program and Service Expansion at the Center at the Heights	Priority	2

high priority of the Council on Aging. The resources available to meet those costs have been assembled from a variety of sources. They are:

- Effective in the FY 2020 budget, the Town approved \$26,000 to support the costs of the Fitness Program;
- Monthly charges for residents provide revenue of approximately \$18,000 per year thanks to the increase in the monthly fees during FY 2019;
- Small donations from residents and local businesses have historically been modest but are slowly increasing;
- The Friends of the CATH provided approximately \$50,000 in FY 2019 and have committed to a further \$35,000 in FY 2020 and \$20,000 in FY 2021. The Friends will have exhausted their resources by that point and have indicated that no further funding for the Fitness Program will be provided; and
- Determination of Need money focused upon senior health and wellness from Beth Israel Deaconess-Needham. The funding available to support the Fitness Program at CATH will gradually increase from \$15,000 to about \$25,000 in FY 2023. There is no funding commitment beyond FY 2023.

Funding Support

	FY 2019	FY 2020	FY 2021	FY 2022
Town Operating Budget	\$0.00	\$26,000.00	\$50,000.00	\$65,000.00
Fees	\$12,000.00	\$18,000.00	\$18,000.00	\$20,000.00
Friends of CATH	\$50,000.00	\$35,000.00	\$20,000.00	\$0.00
BID-N Determination of Need	\$0.00	\$15,000.00	\$20,000.00	\$22,500.00
Other (Misc. Donations)	\$500.00	\$1,200.00	\$1,300.00	\$1,500.00
Total	\$62,500.00	\$95,200.00	\$109,300.00	\$109,000.00

Costs

	FY 2019	FY 2020	FY 2021	FY 2022
Weekdays (M-F)	\$52,000.00	\$54,600.00	\$58,500.00	\$58,500.00
Evenings (M-Th p.m.) & Weekends	\$0.00	\$25,000.00	\$32,760.00	\$32,760.00
Fitness Classes	\$10,452.00	\$15,600.00	\$19,110.00	\$19,110.00
Total	\$62,452.00	\$95,200.00	\$110,370.00	\$110,370.00

Variance between Projected Funding and Anticipated Costs

	FY 2019	FY 2020	FY 2021	FY 2022
Total	\$48.00	\$0.00	(\$1,070.00)	(\$1,370.00)

6 An additional \$20,000 will be given in December 2019, supplementing the more than \$15,000 donated to the CATH so far this year.

**Performance Improvement Funding Request
DSR4**

Department	Health & Human Services/ Public Health Division		
Title	Program and Service Expansion at the Center at the Heights	Priority	2

To achieve full funding of the Fitness Program and to gradually reduce the reliance on external grants and donations, the Town of Needham must gradually increase its operating budget support. This request for additional funds will be phased in over a three-year period, and FY 2021 is the second year of that three-year request.

Requested Salary Costs

Personnel	Rate	Hrs per week	Annual Costs	Comments
Program Support Assistant III	\$27.78	19.5	\$28,277	The Aging Services Division has undergone a renaissance, with a widespread expansion of programs and services over the last 2.5 years. This part-time staff position would assist with developing and coordinating programs, and would take on the primary role of designing and producing <i>The Compass</i> , the Aging Services Division's bi-monthly newsletter and program bulletin.
Van Driver	\$20.00	19.5	\$20,358	Van Driver at 19.5 hrs a week to provide transportation for expanded evening programs and for the transition from one Saturday a month to three Saturdays a month in August 2020. This would allow Division to take advantage of new Vans purchased with FY 2017 and 2019 state budget earmarks.

Requested Expense Costs

Spending Category	Expense Type	DSR4 Request	Comments
Postage	Mailing	\$500	Additional funding to support the mailing costs for <i>The Compass</i> , the Aging Services Division's bi-monthly newsletter
Recreation	Activity Instructors	\$24,000	Partial cost support for the Fitness Program at its current practice of 5 hrs from 9:00 a.m. to 2:00 p.m. every weekday, along with expanded weekday evening and Saturday morning hours
Other Supplies	Branded Items	\$500	Branded items and promotional materials for programs like <i>Healthy Aging at Home</i> and <i>Matter of Balance</i> used to increase visibility and encourage participations.

**Performance Improvement Funding Request
DSR4**

Department	Health & Human Services/ Public Health Division		
Title	Program and Service Expansion at the Center at the Heights	Priority	2

Goals

Continuing the expansion of programs and services for Needham's seniors into the evenings and on Saturdays would address a number of goals from elected and appointed boards. Most directly it address the Council on Aging's Overarching Goal #1 which is to expand services and programs available to Needham's residents.

Additionally, it would directly address the following goal of the Select Board:

- FY 2020 & FY 2021 Guiding Principles #7 "The Town should be an age friendly community."

This budget request would tangentially address the following goal of the Select Board:

- FY 2020 & FY 2021 Guiding Principles #12 "Opportunities to collaborate on additional programs and services that will benefit Needham's veterans will be explored and implemented."

That is because the vast majority of Needham's veterans are seniors who are served by the Aging Services Division in addition to the Veterans Agent.

This budget request would also address following Community Health goals of the Board of Health in FY 2019 and FY 2020:

- CH #2—"Advocate for resources to support and enhance Healthy Aging in the community";
- CH #4—"Identify financial resources to expand the Safety at Home Program, which addresses older adult falls through home visits, exercise programming, and referrals, to support more comprehensive home modifications"; and
- CH #8—"Support existing community initiatives that address public health concerns including senior nutrition, elder isolation, mental health promotion, and domestic violence awareness".

Performance Improvement Funding Request Supplement DSR4S							
Position Title	Program Support Assistant III – <i>The Compass</i> newsletter					Priority	2
Classification		FT		PT		Seasonal	
Part Time /Seasonal	Hours Per Week		19.5		Number of Weeks Per Year		5 2
Compensation Detail							
Base Rate	\$27.78/hr, 19.5 hrs/week					\$28,277	
Other							
Other							
Other							
Other							
Other							
Other							
Other							
Salary and Wage Total						\$28,277	
If Funded the Position Will Require the Following Additional Items							
Description	No	Yes	Explain		Start Up Cost \$	Annual Recurring Cost \$	
Workstation	X		Part-time staff member will use existing share workstation.				
Vehicle	X						
Computer	X		Part-time staff member will use existing shared computer.				
Software	X						
Mobile Communication Device	X						
Uniform	X						
Tools	X						
Equipment	X						
Other							
Other							
Other							
Totals							
Estimated Annual Benefit Cost							
						\$2,175	
Description and Explanation							
The Program Support Assistant III would support the development and delivery of programs and would focus upon the layout and design of <i>The Compass</i>, the Aging Services Division's newsletter. <i>The Compass</i> reflects the programs and services offered at CATH and it is the							

Performance Improvement Funding Request Supplement DSR4S			
Position Title	Program Support Assistant III – <i>The Compass</i> newsletter	Priority	2
primary entrée for attracting new seniors to visit CATH and participate in the programs. If this budget request is approved, this part-time position would share use of a workstation and a computer with existing part-time staff members within Aging Services.			
			V2021

Performance Improvement Funding Request Supplement DSR4S							
Position Title	Van Driver					Priority	2
Classification		FT		PT		Seasonal	
Part Time /Seasonal	Hours Per Week		19.5		Number of Weeks Per Year		5 2
Compensation Detail							
Base Rate	\$20.00/hr, 19.5 hrs/week					\$20,358	
Other							
Other							
Other							
Other							
Other							
Other							
Other							
Other							
Salary and Wage Total						\$20,358	
If Funded the Position Will Require the Following Additional Items							
Description	No	Yes	Explain		Start Up Cost \$	Annual Recurring Cost \$	
Workstation	X		Part-time staff member does not need access to a workstation.				
Vehicle	X						
Computer	X		Part-time staff member will not need access to a computer.				
Software	X						
Mobile Communication Device	X						
Uniform	X						
Tools	X						
Equipment	X						
Other							
Other							
Other							
Totals							
Estimated Annual Benefit Cost						\$2,760	
Description and Explanation							
The Van Driver will provide transportation services to Needham' seniors. The additional part-time Van Driver funded in FY 2020 has allowed for greater access to transportation in the late afternoons and early evenings, and additional funding would support transportation for participants in the expanded evening programs (on Mondays through Thursdays) and for the transition from one Saturday a month to three Saturdays a month beginning in August 2020.							

Performance Improvement Funding Request Supplement
DSR4S

Position Title	Van Driver	Priority	2
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If this budget request is approved, this part-time position will not need access to a workstation or computer or any other accessories noted above. Safety gear (high visibility vest and clothing) will be provided from the Aging Services Division existing budget and the staff member will receive specific safe driver training; funding for that training will also be drawn from the existing Aging Services Division budget. No startup costs are anticipated.

V2021

Performance Improvement Funding Request DSR4					
Department	Health & Human Services/Public Health Division				
Title	Public Health Division Staffing	Priority	3		
DSR4					
Expenditure Classification	FTE	Frequency		Total Amount (A + B)	
		Recurring Amount (A)	One Time Only Amount (B)		
1. Salary and Wage	1.5	\$127,128		\$127,128	
2. Expense					
3. Operating Capital					
4. Department Total (1+2+3)		\$127,128		\$127,128	
5. Other Costs		\$36,866		\$36,866	
6. Grand Total (4+5)		\$163,994		\$163,994	
Budgetary Considerations				Yes	No
Does this request address a goal of the Select Board or other Board or Committee?				X	
If yes, which Board or Committee?		Board of Health			
Has this request been submitted in the last three fiscal years and not funded?				X	
Are there additional costs to implement this request (except for future year operating costs which would be ongoing if funding is approved) which are NOT included in this request?					X
Will the assistance of another department be required to provide support (personnel or financial) for this request to be implemented?					X
Will additional staff (beyond the staff requested in this DSR4 submission) be required if the request is approved?					X
Does the request support activities which produce revenue for the Town?					X
If the request is not approved, will current Town revenues be negatively impacted?					X
Is there an increased exposure for the Town if the request is not approved?				X	
Is specialized training or licensing required (beyond the initial purchase)?					X
Does this request address a documented health or safety issue?				X	
All "YES" responses above must be explained in the narrative below					
Description and Explanation					
Through this budget request, the Public Health division seeks sufficient staffing so that: - The Public Health Division has a full-time director who is able to devote his/her full time and attention to advancing the goals and objectives of the Board of Health and the Public Health Division; and - The Public Health Division's Environmental Health Team will be supported by additional hours for part-time staff to conduct after-hours inspections of food service establishments in Needham. <u>Public Health Director</u> The position of Director of Public Health has been vacant since December 31, 2016 when the Health & Human Services Department was fully established. That length of vacancy affects the operations and efficiency of a division entrusted with a range of public health and sanitary responsibilities, all of which have a material effect on the health and wellness of the Town. If/when occupied, the Director of Public Health position oversees a division with:					

**Performance Improvement Funding Request
DSR4**

Department	Health & Human Services/Public Health Division		
Title	Public Health Division Staffing	Priority	3

- 19 staff members (10.95 FTE including grant positions – 6 full-time benefitted staff, 3 part-time benefitted staff, and 10 part-time staff members ranging from 5 hours a week to 19.5 hours a week); and
- extensive policy and regulatory authority afforded to it by the Needham Board of Health through M.G.L. Chapters 111, Sections 31, 31A, 31B, 122, 127, 127A, and 143; and

A Director of Public Health position was requested in FY 2019 and FY 2020. It was not selected for funding during either fiscal year. Without a Director of Public Health, the Director of Health & Human Services divides his/her attention between larger work that crosses divisions and departments, and the more focused activities of one division which has extensive policy and regulatory authority. Progress on updating and revising the Board of Health's existing regulations has been limited since the HHS transition, and research into new policy positions has also stalled. A Public Health Division Director would allow the division to continue to respond to the demands and needs of the growing town by having a direct leader in policy regulation/adaption and changes that are required to meet the growing needs of Needham.

If a Director of Public Health were hired, that individual would focus on Public Health Division and Board of Health priorities, and the Director of Health & Human Services would concentrate on interdepartmental activities, Town-wide priorities, and oversight of each division's activities.

Funding

Funding needed to support the position of Director of Public Health (K-24) is estimated at \$108,298 which represents the midpoint on the K-24 salary range. The benefits costs of the Public Health Division Director position total \$34,999.

Goals

Filling the long vacant position of Public Health Division Director would address the Board of Health's overarching goal from the Administrative section of the FY 2019 and FY 2020 Board of Health Goals: "Ensure the necessary infrastructure to effectively provide essential public health services."

Environmental Health Inspection Hours

The Needham Public Health Division's Environmental Health team provides a broad range of public health services to the community while enforcing the State Sanitary, Food Protection, and Environmental Codes. These services include policy development, issuance of permits and licenses, ongoing inspection and surveillance, reporting of potential foodborne illnesses, as well as public education through trainings and published articles.

The Environmental Health team currently consists of the Assistant Director, one full-time Environmental Health Agent and one part-time agent for off-hours inspections who works six hours per week. Over the last several years, the team has balanced increasing demands with spearheading new initiatives to improve the health and safety of Town residents. For example, increased demands for more (and more complex) inspections, permits, and plan reviews - due to the Town's continued economic development - mount as the team has also adopted new food

**Performance Improvement Funding Request
DSR4**

Department	Health & Human Services/Public Health Division		
Title	Public Health Division Staffing	Priority	3

standards, updated the technical capability of the team, and written grants.

The Environmental Health team is responsible for generating the vast majority of the revenue produced by the Public Health Division through the costs for permits, plan reviews, fees, and fines.

As demands increase, the Environmental Health team finds its time is limited to effectively and efficiently enforce Board of Health regulations, research best practices, and ensure that the Public Health Division's processes reflect an evidence-based approach to public health.

The Public Health Division respectfully requests funding to support the employment of a second part-time Environmental Health Agent to support essential activities of the team, including:

- Conducting more detailed food service inspections
 - o The Board of Health recently adopted a new risk-based food inspection protocol that improves health and safety outcomes of inspections but also increases the time needed to conduct each inspection.
- Implementing new regulations and ordinances
 - o The Board of Health has a pending regulation regarding dumpsters and a new ordinance for pest control, which will require more staff time to conduct follow-up inspections and complete enforcement activities.
- Maintaining FDA National Retail Food Regulatory Program Standards
 - o The Board of Health will soon adopt the FDA National Retail Food Regulatory Program Standards which will require more staff time for maintenance, ongoing audits, and the coordination of a new Food Advisory Board.
- Expanding the team's reach
 - o The team plans to make Needham's environmental health work some of the strongest in Massachusetts through: applying for more grants to increase funding; increasing services (such as an annual healthy eating week called Nourishing Needham); updating existing Board of Health regulations; developing new Board of Health regulations; conducting a food safety education campaign; and developing a public food grading system.

As the demands mount, the Environmental Health team requires additional capacity to enforce Board of Health regulations and meet the Board's goals. Lapses in the quality and efficiency of services may negatively impact the health of residents and will begin to affect the revenue generated by the Public Health Division.

Funding

Funding is requested in the amount of \$18,200 for the part-time Environmental Health Agent to work ten hours per week. The benefits costs for a part-time environmental health inspector total \$1,867.

Goals

Funding a part-time Environmental Health Agent will address the Board of Health's FY 2019 and FY 2020 Environmental Health (EH) Goals:

Performance Improvement Funding Request DSR4			
Department	Health & Human Services/Public Health Division		
Title	Public Health Division Staffing	Priority	3
• <u>EH#1</u>: Hire additional staff or provide additional resources to maintain EH Unit capacity for inspections, environmental health monitoring, training, and vendor and general public education. • <u>EH #2</u>: Prioritize positive communication and relationships with food service owners and staff and tobacco vendor owners and staff. • <u>EH #3</u>: Work towards the achievement of all nine (9) FDA Voluntary National Retail Food Regulatory Program Standards; pursue federal, state, and non-profit grant resources to offset the costs for achieving full compliance and apply for future FDA grants to make this possible. • <u>EH #4</u>: Implement FDA Standard 9 through categorization of Needham food establishments and use of risk-based inspections Increasing the Environmental Health team's capacity will allow for more efficiency and the continuation of high-quality services, while achieving several Board of Health goals.			
V2021			

Performance Improvement Funding Request Supplement DSR4S							
Position Title	Public Health Director					Priority	3
Classification	X	FT		PT		Seasonal	
Part Time /Seasonal	Hours Per Week				Number of Weeks Per Year		
Compensation Detail							
Base Rate	\$108,928						
Other							
Other							
Other							
Other							
Other							
Other							
Other							
Other							
Salary and Wage Total					\$108,928		
If Funded the Position Will Require the Following Additional Items							
Description	No	Yes	Explain	Start Up Cost \$	Annual Recurring Cost \$		
Workstation	X		Workstation will be assigned at RRC.				
Vehicle	X						
Computer	X		Computer at RRC will be assigned.				
Software		X	Standard office suite is needed.				
Mobile Communication Device		X	Mobile phone with hotspot needed.				
Uniform	X						
Tools	X						
Equipment	X						
Other							
Other							
Other							
Totals							
Estimated Annual Benefit Cost					\$34,999		
Description and Explanation							
The Public Health Division is the only major department/division in the Town of Needham without a dedicated Director. The Board of Health, an elected Board with wide-ranging statutory authority, has been without a director to implement its vision since January 1, 2017. While existing staff members in the Public Health Division and in the Health & Human Services Department do provide some little staffing and support, the Board of Health's policy priorities need the support and attention of a full-time director. If this budget request is approved, the newly hired Public Health Director will require a							

Performance Improvement Funding Request Supplement DSR4S			
Position Title	Public Health Director	Priority	3
computer, phone, and other startup items noted above. A workstation will be made available at the Rosemary Recreation Complex but changing around the existing workstation assignments.			
			V2021

Performance Improvement Funding Request Supplement DSR4S									
Position Title	Environmental Health Inspections					Priority	3		
Classification	X	FT		PT		Seasonal			
Part Time /Seasonal	Hours Per Week		10.0		Number of Weeks Per Year			5 2	
Compensation Detail									
Base Rate	\$35 per hour, 10 hrs/ week					\$18,200			
Other									
Other									
Other									
Other									
Other									
Other									
Other									
Salary and Wage Total						\$18,200			
If Funded the Position Will Require the Following Additional Items									
Description	No	Yes	Explain		Start Up Cost \$		Annual Recurring Cost \$		
Workstation	X		Primary assignment is field inspections.						
Vehicle	X								
Computer	X		No computer needed beyond swing spaces at RRC.						
Software	X								
Mobile Communication Device	X	X	Tablet for inspections is already purchased.						
Uniform	X								
Tools	X								
Equipment	X								
Other									
Other									
Other									
Totals									
Estimated Annual Benefit Cost									
					\$1,867				
Description and Explanation									
The Public Health Division is the only major department/division in the Town of Needham without a dedicated Director. The Board of Health, an elected Board with wide-ranging statutory authority, has been without a director to implement its vision since January 1, 2017. While existing staff members in the Public Health Division and in the Health & Human Services Department do provide some little staffing and support, the Board of Health's policy priorities need the support and attention of a full-time director.									

Performance Improvement Funding Request Supplement
DSR4S

Position Title	Environmental Health Inspections	Priority	3
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If this budget request is approved, the newly part-time Environmental Health Agent will be primarily based in the field. He/she would have a tablet with the inspection software (tablet and software already purchased) and would rarely sit at a workstation in the Public Health Division. On those instances, the environmental health agent can use one of the existing computers already assigned for part-time staff. He/she will not require a computer, phone, and other startup items noted above.

V2021

Special Financial Warrant Article Request DSR5			
Title	Public Health Division Accreditation		
Fiscal Year	FY 2021	Department	Health & Human Services
Funding Amount	\$70,000	Funding Source	Operating Budget
Article Information			
Formal recognition by the national Public Health Accreditation Board has become an important goal for local and state health departments across the country. Accreditation outcomes include improved performance and quality of services, and increased ability to be responsive to existing and emerging health needs in Needham. Accreditation is a mark of a highly functional, proactive, and professional public health department and its attainment will enhance the Public Health Division's competitiveness for future grant and foundation funding.			
Disclosures		YES	NO
1. Was this request submitted last year?		X	
2. Is this a recurring special financial warrant article?		X	X
3. Is this a matching grant funding request?			X
4. Is this a CPA funding request?			X
5. Is this a revolving fund request?			X
6. Is this a pilot program request?			X
7. Is this a study?			X
8. Is this a program that is planned to be in place for more than one year?		X	
9. Is this required by a court or other jurisdictional order?			X
10. Is this a personnel related request?		X	
11. Is this a local option acceptance request?			X
12. Is this in support of a goal of a Board or Committee?		X	
All "YES" responses must be explained Below			
Disclosure Explanation			
Achieving accreditation for the Public Health Division is a long-standing priority of the Needham Board of Health (BOH), and this request, or one like it, has been submitted four times in total. Public Health Division accreditation has been included in the BOH's goals for five fiscal years, and is the first long-term goal under the Administrative Section of the FY 2019 – 2020 BOH goals. <i>"Pursue Public Health Division accreditation and support the establishment of a culture of continuous quality improvement."</i> The process of achieving accreditation is rigorous and requires significant staff time and resources to conduct health assessments, develop specific plans, procedures, and policies, and complete a formal application. In 2018, the Public Health Division received a nine-month Accreditation Support Initiative grant of \$14,960 from the National Association of County and City Health Officials to help advance these efforts. Additional funding is requested to support these efforts moving forward; funding will cover approximately 5 hours per week from a part-time staff member along with other accreditation-related expenses. Once successful in achieving all of the requirements and pre-requisites for accreditation, the Public Health Division will formally apply using the funding remaining in the Special Warrant Article to cover the initial application fee of \$14,000. If the accreditation application is successful, there will be an annual fee of approximately \$6,000 to maintain accreditation and to support the costs of re-accreditation every five years.			

Special Financial Warrant Article Request DSR5			
Title	Funding to Retain Scientific Experts and Consultants		
Fiscal Year	FY 2021	Department	Health & Human Services
Funding Amount	\$50,000	Funding Source	Operating Budget
Article Information			
The Public Health Division requests funding to support a Board of Health (BOH) goal, a Select Board priority, and pressing community priority. The request is to establish a source of funding that allows the BOH to retain outside scientific experts and consultants to evaluate novel and emerging health issues about which the Board and the Public Health Division lack the necessary expertise. For example, this fund would allow for the retention of an outside expert to evaluate a proposed utility project that has unknown or uncertain environmental and health impacts, such as the Eversource Underground Utility Line Redundancy project. When there is a permit application process, the BOH has the ability to require applicants to pay an 'outside consultant fee.' This funding request addresses the need to access expertise to evaluate community impact in instances when there is no permit application, such as utility projects.			
Disclosures		YES	NO
1. Was this request submitted last year?			X
2. Is this a recurring special financial warrant article?		X	X
3. Is this a matching grant funding request?			X
4. Is this a CPA funding request?			X
5. Is this a revolving fund request?			X
6. Is this a pilot program request?			X
7. Is this a study?			X
8. Is this a program that is planned to be in place for more than one year?		X	
9. Is this required by a court or other jurisdictional order?			X
10. Is this a personnel related request?			X
11. Is this a local option acceptance request?			X
12. Is this in support of a goal of a Board or Committee?		X	
All "YES" responses must be explained Below			
Disclosure Explanation			
There have been a number of large-scale utility projects which have emerged suddenly as a community concern due to possible environmental health impacts; examples include the Eversource underground utility project and Verizon 5G Cell Sites. There is a need to access expertise to understand potential impacts of such projects. There is limited ability to anticipate such projects, and no ability to require utilities to pay for outside experts. Having the resources necessary to understand and respond to new and emerging environmental health challenges in Needham is a high priority of the BOH and was included as the top goal in the Environmental Health Section of the FY 2019 – 2020 BOH goals. "Hire additional staff or provide additional resources to maintain EH unity capacity for inspections, environmental health monitoring, training, and vendor and general public education." Additionally, one of the Select Board's New Initiatives in its FY20-21 Goals is to: "Investigate the potential impact of Small Cell and 5G Technology on the Town and formalize a policy for considering Grant of Location Requests." Funding this request would help reach such goals and strengthen Needham's capacity to assess emerging environmental health threats.			

Performance Improvement Funding Request DSR4					
Department	ITC via HHS/Youth & Family Services				
Title	Electronic Medical Record and Program Registration	Priority	TBD		
DSR4					
Expenditure Classification	FTE	Frequency		Total Amount (A + B)	
		Recurring Amount (A)	One Time Only Amount (B)		
1. Salary and Wage		0	0	0	
2. Expense		\$4,000	0	\$4,000	
3. Operating Capital		0	0	0	
4. Department Total (1+2+3)		\$4,000	0	\$4,000	
5. Other Costs					
6. Grand Total (4+5)		\$4,000	0	\$4,000	
Budgetary Considerations				Yes	No
Does this request address a goal of the Select Board or other Board or Committee?				X	
If yes, which Board or Committee?		Youth Commission			
Has this request been submitted in the last three fiscal years and not funded?					X
Are there additional costs to implement this request (except for future year operating costs which would be ongoing if funding is approved) which are NOT included in this request?					X
Will the assistance of another department be required to provide support (personnel or financial) for this request to be implemented?				X	
Will additional staff (beyond the staff requested in this DSR4 submission) be required if the request is approved?					X
Does the request support activities which produce revenue for the Town?				X	
If the request is not approved, will current Town revenues be negatively impacted?					X
Is there an increased exposure for the Town if the request is not approved?					X
Is specialized training or licensing required (beyond the initial purchase)?					X
Does this request address a documented health or safety issue?					X
All "YES" responses above must be explained in the narrative below					
Description and Explanation					
The Youth and Family Services (YFS) Division has met with clients for treatment since the division was established. Since this time, the division has maintained paper records on all clients and sessions. These thousands of records are then kept in physical file storage. This is also true for all program information and registration. Part of the mission of the division, in addition to the goals of the Youth Commission, is providing services to the community without any barriers to treatment. The division is dedicated to this mission and would like to help eliminate these barriers so that residents can access needed mental health services and program support. Youth and Family Services seeks funding for two software programs, one that would allow for individual client/family records to be kept (Theranest), and one that would allow for online program book-keeping and registration (MyRec). Both of these systems would help the division function at a higher level, being able to have a greater impact on the residents we serve. These systems would help to prevent errors and misprints and have safety features to ensure that the correct information is communicated.					

**Performance Improvement Funding Request
DSR4**

Department	ITC via HHS/Youth & Family Services		
Title	Electronic Medical Record and Program Registration	Priority	TBD
The Electronic Medical Record (EMR) would provide the opportunity to avoid paper records and move to an electronic record keeping system. Youth & Family Services has three full time clinical staff members and three, soon to be four, part-time staff members. The addition of these part-time staff members has allowed the division to expand its mental health services tremendously, offering after-hours appointments and community outreach. YFS has significantly cut down on our waitlist which will allow residents to get quicker access to services which is crucial as evidence shows that the sooner treatment is sought out, the higher chance for more positive outcomes. The division is providing hundreds of clinical sessions every year, serving several dozen residents at any given time. These numbers are not exact as there is no simple, electronic way to track this data at this time. An EMR allows for all of this data to be tracked much more accurately. This system would further enhance clinical services and improve quality of care as it would allow for notes to be linked directly to the treatment plans and treatment objectives, more easily access an overview of their treatment, past goals that have been met and interventions that have been successful. It would meet HIPAA standards and would allow for easier oversight to ensure that all records are appropriately maintained and that all documentation is completed. In addition, it would improve office workflow, providing a platform for easier scheduling and communication both internally and externally. Staff would also be able to access client records when they are not on site, which is essential when staff members are meeting with clients and families in the community. On another note, the EMR will allow the division to track data and trends, so that we can be more aware of what is going on in the community. For example, the system could analyze what mental health disorders are most present, what treatment has been most successful, how long people require treatment depending on their mental health disorders. This EMR system is first priority in improving the division and will cost about \$1,000 per year. The Youth & Family Services Division has created and implemented a number of different programs over the years, ranging from volunteer programs to peer mentor programs to support groups and parents' seminars and trainings. The division is constantly assessing the needs of the community and implementing additional programming to meet these needs. Last year, the division had approximately 500 participants enrolled in the various programs. At this time, residents have to mail-in or drop off program registrations and payments. This creates a barrier for some families who may have difficulties getting this information to the division. An online system would make registration easy, and would increase participation in YFS programs; residents could just go online, register and submit payment if required. This system would allow YFS to easily monitor all of its programs, allow for electronic signatures and waivers, track attendance and all other required paperwork. In addition, the division staff could easily see who enrolls in which programs, carry over information if families sign up for multiple programs, and structure future program development on some of this information gathered. If the division could cut down on the time needed around organizing paper, it could spend that time planning and implementing new programs to best serve the community. The Aging Services Division is in the process of switching over to this same system, which would also allow for better connectivity across divisions. Although we would require our own license for the program, it would be easier to manage when programs are run collaboratively. This system is our second priority and runs about \$3, 000 per year. To successfully implement the EMR and the program registration software, the YFS division will need assistance from the Information Technology to install the software, and from the			

Performance Improvement Funding Request DSR4			
Department	ITC via HHS/Youth & Family Services		
Title	Electronic Medical Record and Program Registration	Priority	TBD
financial departments (Accounting/Treasurer) to help process payments that are completed through the system.			
V2021			

Health and Human Services	FY2021 DSR2 Request	BASE \$ Change from FY2020	BASE % Change	FY2021 DSR4 Request	FY2021 Total Request	Total \$ Change from FY2020	Total % Change	FY2020 Budgeted
Salary and Wage	\$1,734,921.00	\$44,223.00	2.6%	\$278,608.00	\$2,013,529.00	\$322,831.00	19.1%	\$1,690,698
Expenses	\$392,885.00	\$3,611.00	0.9%	\$47,155.00	\$440,040.00	\$50,766.00	13.0%	\$389,274
Operating Capital								
Other								
Total	\$2,127,806.00	\$47,834.00	2.3%	\$325,763.00	\$2,453,569.00	\$373,597.00		\$2,079,972

Health and Human Services	FY2019 Expenditures	FY2018 Expenditures	FY2017 Expenditures
Salary and Wage	\$1,422,940	\$1,304,912	\$1,194,266
Expenses	\$326,153	\$282,046	\$254,800
Operating Capital			
Other			
Total	\$1,749,093	\$1,586,958	\$1,449,066

Salary and Wage	\$1,734,921.00	\$44,223.00	2.6%	\$278,608.00	\$2,013,529.00	\$322,831.00	19.1%	1,690,698.00	1,422,939.91	1,304,911.85	1,194,266.33
Health and Human Services	FY2021 DSR2 Request	BASE \$ Change from FY2020	BASE % Change	FY2021 DSR4 Request	FY2021 Total Request	Total \$ Change from FY2020	Total % Change	FY2020 Budgeted	FY2019 Expenditures	FY2018 Expenditures	FY2017 Expenditures
HEALTH SALARIES PERMANENT	\$576,703.00	\$14,759	2.6%	\$183,496.00	\$760,199.00	\$198,255	35.3%	561,944.00	540,129.21	563,424.80	428,005.60
HEALTH SALARIES TEMPORARY	\$123,303.00	\$513	0.4%	\$46,477.00	\$169,780.00	\$46,990	38.3%	122,790.00	101,183.52	72,212.52	77,753.10
HEALTH SALARIES OVERTIME	\$3,000.00				\$3,000.00			3,000.00			
HEALTH SALARIES REGULAR Other	\$4,600.00	-\$25	-0.5%		\$4,600.00	-\$25	-0.5%	4,625.00	4,605.24	4,442.76	2,115.38
HEALTH TUITION REIMBURSEMENT									4,000.00	3,500.00	
HEALTH SALARIES STIPENDS	\$6,500.00	\$500	8.3%		\$6,500.00	\$500	8.3%	6,000.00	3,000.00	3,000.00	1,500.00
AGING SERVICES SALARIES PERMANENT	\$525,887.00	\$24,310	4.8%		\$525,887.00	\$24,310	4.8%	501,577.00	389,294.46	328,735.08	348,535.29
AGING SERVICES SALARIES TEMPORARY	\$110,840.00	-\$13,949	-11.2%	\$48,635.00	\$159,475.00	\$34,686	27.8%	124,789.00	81,028.89	49,829.82	43,610.48
AGING SERVICES SALARIES OVERTIME									181.33	237.22	
AGING SERVICES SALARIES Other	\$4,100.00	-\$19	-0.5%		\$4,100.00	-\$19	-0.5%	4,119.00		3,000.08	
AGING SERVICES SALARIES STIPENDS											
YOUTH AND FAMILY SERVICES SALARIES REGULAR	\$327,898.00	\$18,221	5.9%		\$327,898.00	\$18,221	5.9%	309,677.00	264,478.68	204,012.44	261,501.11
YOUTH AND FAMILY SERVICES SALARIES TEMPORARY	\$43,690.00				\$43,690.00			43,690.00	32,538.58	31,908.08	19,470.41
YOUTH AND FAMILY SERVICES SALARIES OVERTIME											
YOUTH AND FAMILY SERVICES SALARIES Other	\$3,400.00	-\$587	-14.7%		\$3,400.00	-\$587	-14.7%	3,987.00		38,051.40	6,275.00
YOUTH AND FAMILY SERVICES SALARIES STIPENDS	\$2,000.00	\$500	33.3%		\$2,000.00	\$500	33.3%	1,500.00		57.69	3,000.00
VETERANS' SVCS SALARIES REGULAR											
VETERANS' SVCS SALARIES TEMPORARY											
VETERANS' SVCS SALARIES OVERTIME											
VETERANS' SVCS SALARIES REGULAR Other											
VETERANS' SVCS SALARIES STIPEND	\$3,000.00				\$3,000.00			3,000.00	2,500.00	2,499.96	2,499.96

Schedule of Fees and Charges					
Department		Health Division			
	Description	Rate	Frequency	Authority	Last Reviewed
1	Animal Permit	100	Annual	Article 4-Keeping of Domestic Animals	April 2019
2	Additional animal per species for laboratory animals	20	Annual	Article 4-Keeping of Domestic Animals	April 2019
3	Biotechnology Initial Registration	750	One time fee		April 2019
4	Biotechnology Renewal	500	Annual		April 2019
5	Body Art Establishment	700	Annual	Article 7-Regulation for Body Art Establishments & Practitioners	April 2019
6	Body Art Practitioner	575	Annual	Article 7-Regulation for Body Art Establishments & Practitioners	April 2019
7	Bodyworks Establishment Plan Review	200	One time fee	Article 19-Regulation Governing the Practice of Bodywork	April 2019
8	Bodyworks Establishment Permit	100	Annual	Article 19-Regulation Governing the Practice of Bodywork	April 2019
9	Bodyworks Practitioner	50	Annual	Article 19-Regulation Governing the Practice of Bodywork	April 2019
10	Breast Milk Registration	25	Annual	M.G.L., Chapter 111, Section 31	April 2019
11	Camp license	175	Annual	M.G.L., Chapter 111, Section 31	April 2019
12	Demolition	60	One time fee	M.G.L., Chapter 111, Section 31	April 2019

Schedule of Fees and Charges

Department		Health Division			
	Description	Rate	Frequency	Authority	Last Reviewed
13	Bottling Permit	500	Annual	M.G.L., Chapter 111, Section	April 2019
14	Food service-less than 50 seats, retail 1500-3000 sq. ft.	265	Annual	M.G.L., Chapter 111, Section 31	April 2019
15	Food Service-more than 50 seats, retail 3000-6000 sq. ft.	460	Annual	M.G.L., Chapter 111, Section 31	April 2019
16	Food Service-150-250 seats, retail 6000-10,000 sq. ft.	525	Annual	M.G.L., Chapter 111, Section 31	April 2019
17	Food Service-more than 250 seats	625	Annual	M.G.L., Chapter 111, Section 31	April 2019
18	Mobile Food; food prep or PHF's; small; retail less than 1500 sq. ft.	Note	Annual	M.G.L., Chapter 111, Section 31	April 2019
19	Food Plan Review	225	Annual	M.G.L., Chapter 111, Section 31	April 2019
20	Food Plan review – per revision	30	One time fee	M.G.L., Chapter 111, Section 31	April 2019
21	Food - Prepackaged (no refrigeration); very limited retail; no coffee; good compliance record	75	Annual	M.G.L., Chapter 111, Section 31	April 2019
22	Food - Prepackaged (refrigeration); limited retail; mobile prepackaged	125	Annual	M.G.L., Chapter 111, Section 31	April 2019
23	Food – Retail more than 10,000 sq. ft	700	Annual	M.G.L., Chapter 111, Section 31	April 2019
24	Food – Temporary/one day event	30	One time fee	M.G.L., Chapter 111, Section 31	Unknown
25	Food – Farmers market/seasonal	50	Annual	M.G.L., Chapter 111, Section 31	April 2019
26	Hauler Truck – septic, grease, rubbish	100	Annual	Article 2- Regulation for Disposal of Refuse	April 2019
27	Hotel/Motel	200	Annual	M.G.L., Chapter 111, Section 31	April 2019
28	Marijuana Plan review (dispensary site)	1000	One time fee	Article 20- Regulation to	April 2019

Schedule of Fees and Charges					
Department		Health Division			
	Description	Rate	Frequency	Authority	Last Reviewed
				Ensure the Sanitary and Safe Operations of Registered Marijuana Dispensaries and the Sale of Marijuana to Persons with Documented Medical Needs	
29	Marijuana Plan review (cultivation/processing site)	1000	One time fee	Article 20- Regulation to Ensure the Sanitary and Safe Operations of Registered Marijuana Dispensaries and the Sale of Marijuana to Persons with Documented Medical Needs	April 2019
30	Marijuana Plan review (storage disposal)	1000	One time fee	Article 20- Regulation to Ensure the Sanitary and Safe Operations of Registered Marijuana Dispensaries and the Sale of Marijuana to Persons with Documented Medical Needs	April 2019
31	Marijuana Plan review (continuity of	0	One time	Article 20-	April 2019

Schedule of Fees and Charges					
Department		Health Division			
	Description	Rate	Frequency	Authority	Last Reviewed
	business/continuity of operations		fee	Regulation to Ensure the Sanitary and Safe Operations of Registered Marijuana Dispensaries and the Sale of Marijuana to Persons with Documented Medical Needs	
32	Marijuana Plan review (security)	0	One time fee	Article 20- Regulation to Ensure the Sanitary and Safe Operations of Registered Marijuana Dispensaries and the Sale of Marijuana to Persons with Documented Medical Needs	April 2019
33	Registered Marijuana Dispensary	2500	Annual	Article 20- Regulation to Ensure the Sanitary and Safe Operations of Registered Marijuana Dispensaries and the Sale of Marijuana to Persons with Documented Medical Needs	April 2019

Schedule of Fees and Charges					
Department		Health Division			
	Description	Rate	Frequency	Authority	Last Reviewed
34	Marijuana Home Cultivation	150	Annual	Article 20-Regulation to Ensure the Sanitary and Safe Operations of Registered Marijuana Dispensaries and the Sale of Marijuana to Persons with Documented Medical Needs	April 2019
35	Medical Waste Hauler	100	Annual	Article 2-Regulation for Disposal of Refuse	April 2019
36	Non-Profit	50%	One time or Annual	M.G.L., Chapter 111, Section 31	April 2019
37	Disposal of Sharps	100	Annual	M.G.L., Chapter 111, Section 31	April 2019
38	Public/semi public pool – Plan review	250	One time fee	M.G.L., Chapter 111, Section 31	April 2019
39	Public/semi public – seasonal permit	175	Annual	M.G.L., Chapter 111, Section 31	April 2019
40	Public/semi public pool – annual permit	250	Annual	M.G.L., Chapter 111, Section 31	April 2019
V2019					

Schedule of Fees and Charges

Department		Health Division			
	Description	Rate	Frequency	Authority	Last Reviewed
1	Swimming Pool – variance initial application	140	One time fee	M.G.L., Chapter 111, Section 31	April 2019
2	Swimming pool – variance renewal	75	Annual	M.G.L., Chapter 111, Section 31	April 2019
3	Indoor Tanning – establishment	500	Annual	Article 21- Regulation of Indoor Tanning Facility	April 2019
4	Indoor Tanning – each booth	250	Annual	Article 21- Regulation of Indoor Tanning Facility	April 2019
5	Septic Installer's permit & test	250/125	One time fee	M.G.L., Chapter 111, Section 31	April 2019
6	Septic Installer's test	30	Every two years	M.G.L., Chapter 111, Section 31	April 2019
7	Soil application (less than 2 hours)	425	One time fee	M.G.L., Chapter 111, Section 31	April 2019
8	Soil application (each additional hour 2 initial hours)	75	One time fee	M.G.L., Chapter 111, Section 31	April 2019
9	Septic Plan review	275	One time fee	M.G.L., Chapter 111, Section 31	April 2019
10	Addition to home with Septic	75	One time fee	M.G.L., Chapter 111, Section 31	April 2019
11	Deed restriction	125	One time fee	M.G.L., Chapter 111, Section 31	April 2019
12	Additional Plan Reviews for septic design	50	One time fee	M.G.L., Chapter 111, Section 31	April 2019
13	Septic construction permit	350	One time fee	M.G.L., Chapter 111, Section 31	April 2019
14	Excavation & trench permit	50	One time fee	Article 18- Excavation and Trench Safety	April 2019
15	Construction permit – minor system repair	125	One time fee	M.G.L., Chapter 111, Section 31	April 2019

Schedule of Fees and Charges

Department		Health Division			
	Description	Rate	Frequency	Authority	Last Reviewed
16	Septic variance request	150	One time fee	M.G.L., Chapter 111, Section 31	April 2019
17	Tobacco Permit to sell	700	Annual	Article 1- Regulation Affecting Smoking and the Sale and Distribution of Tobacco Products in Needham	April 2019
18	Vaccine administration fee: clinics (per shot)	10	One time fee	M.G.L., Chapter 111, Section 31	April 2019
19	Well application – irrigation	150	One time fee	M.G.L., Chapter 111, Section 31	April 2019
20	Well application – geothermal	225	One time fee	M.G.L., Chapter 111, Section 31	April 2019
21	Well application – site visit to well per hour	75	One time fee	M.G.L., Chapter 111, Section 31	April 2019
22	Woodburning boiler permit	100	Annual	M.G.L., Chapter 111, Section 31	April 2019
23	Beaver Removal Permit	75	One time fee	M.G.L. Chapter 111, Section 31	April 2019
24	Pre-Residency Housing Inspection	75	One time fee	M.G.L. Chapter 111, Section 31	April 2019
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Schedule of Fees and Charges					
Department		Health Division			
	Description	Rate	Frequency	Authority	Last Reviewed
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Schedule of Fees and Charges					
Department		Health and Human Services – Aging Services			
	Description	Rate	Frequency	Authority	Last Reviewed
1	Scott Brumit – Tai Chi	\$48.00	Per Session	Council on Aging Board of Directors	10/10/2019
2	Steve Cadigan – Train the Brain (Monday)	\$56.00	Per Session	Council on Aging Board of Directors	10/10/2019
3	Steve Cadigan - Arthritis Exercise (Tuesday)	\$72.00	Per Session	Council on Aging Board of Directors	10/10/2019
4	Lisa Karger -Barre	\$64.00	Per Session	Council on Aging Board of Directors	10/10/2019
5	Steve Cadigan - Arthritis Exercise (Thursday)	\$72.00	Per Session	Council on Aging Board of Directors	10/10/2019
6	Hsiu-Hui Chen – NIA	\$64.00	Per Session	Council on Aging Board of Directors	10/10/2019
7	Hsiu-Hui Chen – Line Dancing	\$56.00	Per Session	Council on Aging Board of Directors	10/10/2019
8	Betty Hood – Ballroom Dancing/Hustle	\$32.00	Per Session	Council on Aging Board of Directors	10/10/2019
9	Lisa Karger - Pilates	\$64.00	Per Session	Council on Aging Board of Directors	10/10/2019
10	Beth Knaus – Creative Writing	Free	Per Session	Council on Aging Board of Directors	10/10/2019
11	Michelle Lawlor –Yoga (Thursday)	\$64.00	Per Session	Council on Aging Board of Directors	10/10/2019
12	Adrienne Lederman – Printmaking/Drawing	\$15.00	Per Session	Council on Aging Board of Directors	10/10/2019
13	Sandra Levy – Yoga (Monday)	\$32.00	Per Session	Council on Aging Board of Directors	10/10/2019
14	Chris Morrison - Zumba	Free	Per Session	Council on Aging Board of Directors	10/10/2019
15	Pearl Pressman – Strength Training (Monday)	\$56.00	Per Session	Council on Aging Board of Directors	10/10/2019
16	Pearl Pressman – Strength Training (Friday)	\$64.00	Per Session	Council on Aging Board of Directors	10/10/2019
17	Randy Sharek - Train the Brain (Monday)	\$56.00	Per Session	Council on Aging Board of Directors	10/10/2019
18	Randy Sharek- Arthritis Exercise (Tuesday)	\$72.00	Per Session	Council on Aging Board of Directors	10/10/2019
19	Randy Sharek - Train the Brain (Thursday)	\$72.00	Per Session	Council on Aging Board of Directors	10/10/2019
20	Randy Sharek - Ball Arthritis Exercise (Thursday)	\$64.00	Per Session	Council on Aging Board of Directors	10/10/2019
21	Carol Wein – Technology Classes	\$15.00	Per Session	Council on Aging Board of Directors	10/10/2019
22	Marjorie Wein – Technology Classes	\$15.00	Per Session	Council on Aging Board of Directors	10/10/2019
23	Leslie Worris – Better Bones	\$56.00	Per Session	Council on Aging Board of Directors	10/10/2019
24	Leslie Worris – Better Balance	\$56.00	Per Session	Council on Aging Board of Directors	10/10/2019
25	Pearl Pressman - Weight Management	\$56.00	Per Session	Council on Aging Board of Directors	10/10/2019

Schedule of Fees and Charges					
Department		Health and Human Services – Aging Services			
	Description	Rate	Frequency	Authority	Last Reviewed
26	Steve Cadigan-PITT Exercise Program	\$64.00	Per Session	Council on Aging Board of Directors	10/10/2019
27	Fitness Room	\$25.00	Monthly	Council on Aging Board of Directors	10/10/2019
28	Lunch Bunch	\$5.00	Per Session	Council on Aging Board of Directors	10/10/2019
29	Beaded Jewelry Class	\$5.00	Per Session	Council on Aging Board of Directors	10/10/2019
30	Betty Hood-Ballroom Dancing/Waltz	\$40.00	Per Session	Council on Aging Board of Directors	10/10/2019
31	Leslie Worris- Better Bones [Thursday]	\$56.00	Per Session	Council on Aging Board of Directors	10/10/2019
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Schedule of Fees and Charges

Department		Youth & Family Services			
	Description	Rate	Frequency	Authority	Last Reviewed
1	Employment Listings	10	Per list	Youth Commission	2018
2	Peer Tutor	45	Per year	Youth Commission	2018
3	Family Fun Night	25	Per night	Youth Commission	New
4	Wilderness	25-35	Per program	Youth Commission	new
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Health and Human Services	FY2021 DSR2 Request	BASE \$ Change from FY2020	BASE % Change	FY2021 DSR4 Request	FY2021 Total Request	Total \$ Change from FY2020	Total % Change	FY2020 Budgeted	FY2019 Expenditures	FY2018 Expenditures	FY2017 Expenditures
Salary and Wage	\$1,734,921.00	\$44,223.00	2.6%	\$278,608.00	\$2,013,529.00	\$322,831.00	19.1%	\$1,690,698	\$1,422,940	\$1,304,912	\$1,194,266
Expenses	\$392,885.00	\$3,611.00	0.9%	\$47,155.00	\$440,040.00	\$50,766.00	13.0%	\$389,274	\$326,153	\$282,046	\$254,800
Operating Capital											
Other											
Total	\$2,127,806.00	\$47,834.00	2.3%	\$325,763.00	\$2,453,569.00	\$373,597.00		\$2,079,972	\$1,749,093	\$1,586,958	\$1,449,066

Salary and Wage	\$1,734,921.00	\$44,223.00	2.6%	\$278,608.00	\$2,013,529.00	\$322,831.00	19.1%	1,690,698.00	1,422,939.91	1,304,911.85	1,194,266.33
Health and Human Services	FY2021 DSR2 Request	BASE \$ Change from FY2020	BASE % Change	FY2021 DSR4 Request	FY2021 Total Request	Total \$ Change from FY2020	Total % Change	FY2020 Budgeted	FY2019 Expenditures	FY2018 Expenditures	FY2017 Expenditures
HEALTH SALARIES PERMANENT	\$576,703.00	\$14,759	2.6%	\$183,496.00	\$760,199.00	\$198,255	35.3%	561,944.00	540,129.21	563,424.80	428,005.60
HEALTH SALARIES TEMPORARY	\$123,303.00	\$513	0.4%	\$46,477.00	\$169,780.00	\$46,990	38.3%	122,790.00	101,183.52	72,212.52	77,753.10
HEALTH SALARIES OVERTIME	\$3,000.00				\$3,000.00			3,000.00			
HEALTH SALARIES REGULAR Other	\$4,600.00	-\$25	-0.5%		\$4,600.00	-\$25	-0.5%	4,625.00	4,605.24	4,442.76	2,115.38
HEALTH TUITION REIMBURSEMENT									4,000.00	3,500.00	
HEALTH SALARIES STIPENDS	\$6,500.00	\$500	8.3%		\$6,500.00	\$500	8.3%	6,000.00	3,000.00	3,000.00	1,500.00
AGING SERVICES SALARIES PERMANENT	\$525,887.00	\$24,310	4.8%		\$525,887.00	\$24,310	4.8%	501,577.00	389,294.46	328,735.08	348,535.29
AGING SERVICES SALARIES TEMPORARY	\$110,840.00	-\$13,949	-11.2%	\$48,635.00	\$159,475.00	\$34,686	27.8%	124,789.00	81,028.89	49,829.82	43,610.48
AGING SERVICES SALARIES OVERTIME									181.33	237.22	
AGING SERVICES SALARIES Other	\$4,100.00	-\$19	-0.5%		\$4,100.00	-\$19	-0.5%	4,119.00		3,000.08	
AGING SERVICES SALARIES STIPENDS											
YOUTH AND FAMILY SERVICES SALARIES REGULAR	\$327,898.00	\$18,221	5.9%		\$327,898.00	\$18,221	5.9%	309,677.00	264,478.68	204,012.44	261,501.11
YOUTH AND FAMILY SERVICES SALARIES TEMPORARY	\$43,690.00				\$43,690.00			43,690.00	32,538.58	31,908.08	19,470.41
YOUTH AND FAMILY SERVICES SALARIES OVERTIME											
YOUTH AND FAMILY SERVICES SALARIES Other	\$3,400.00	-\$587	-14.7%		\$3,400.00	-\$587	-14.7%	3,987.00		38,051.40	6,275.00
YOUTH AND FAMILY SERVICES SALARIES STIPENDS	\$2,000.00	\$500	33.3%		\$2,000.00	\$500	33.3%	1,500.00		57.69	3,000.00
VETERANS' SVCS SALARIES REGULAR											
VETERANS' SVCS SALARIES TEMPORARY											
VETERANS' SVCS SALARIES OVERTIME											
VETERANS' SVCS SALARIES REGULAR Other											
VETERANS' SVCS SALARIES STIPEND	\$3,000.00				\$3,000.00			3,000.00	2,500.00	2,499.96	2,499.96

Expenses	\$392,885.00	\$3,611	0.9%	\$47,155.00	\$440,040.00	\$50,766	13.0%	389,274.00	326,153.27	282,046.03	254,799.57
Health and Human Services	FY2021 DSR2 Request	BASE \$ Change from FY2020	BASE % Change	FY2021 DSR4 Request	FY2021 Total Request	Total \$ Change from FY2020	Total % Change	FY2020 Budgeted	FY2019 Expenditures	FY2018 Expenditures	FY2017 Expenditures
HEALTH ENERGY											
HEALTH ELECTRIC											
HEALTH OIL											
HEALTH NATURAL GAS											
HEALTH NON-ENERGY UTILITIES											
HEALTH REPAIRS & MAINTENANCE									986.12	280.50	274.98
HEALTH R&M BUILDING											
HEALTH R&M MEP											
HEALTH HARDWARE MAINT AGREEMENTS	\$500.00				\$500.00			500.00			
HEALTH R&M EQUIP											
HEALTH R&M VEHICLES											
HEALTH RENTALS & LEASES										635.60	
HEALTH SOFTWARE LIC & USER FEES									1,480.50		
HEALTH OTHER PROP REL SERVICES	\$500.00				\$500.00			500.00	184.40		
HEALTH SOLID WASTE DISPOSAL											
HEALTH PROFESSIONAL & TECHNICAL	\$28,000.00				\$28,000.00			28,000.00	108,070.48	94,524.49	5,157.59
HEALTH P&T SEM & TRAIN	\$2,000.00			\$2,000.00	\$4,000.00	\$2,000	100.0%	2,000.00	7,698.99	8,338.70	3,303.00
HEALTH P&T SFTWR LIC FEE		-\$660	-100.0%			-\$660	-100.0%	660.00		7,224.00	514.00
HEALTH P&T LIC PROF	\$87,500.00	\$2,500	2.9%	\$8,000.00	\$95,500.00	\$10,500	12.4%	85,000.00			93,605.91
HEALTH P&T LEGAL SVCS											
HEALTH ADVERTISING	\$2,500.00			\$2,000.00	\$4,500.00	\$2,000	80.0%	2,500.00	2,997.60	2,450.00	2,000.00
HEALTH COMMUNICATIONS	\$2,000.00			\$4,000.00	\$6,000.00	\$4,000	200.0%	2,000.00			980.88
HEALTH POSTAGE	\$1,500.00				\$1,500.00			1,500.00	1,034.99	1,019.33	879.07
HEALTH COMM - LANDLINE											

Expenses	\$392,885.00	\$3,611	0.9%	\$47,155.00	\$440,040.00	\$50,766	13.0%	389,274.00	326,153.27	282,046.03	254,799.57
Health and Human Services	FY2021 DSR2 Request	BASE \$ Change from FY2020	BASE % Change	FY2021 DSR4 Request	FY2021 Total Request	Total \$ Change from FY2020	Total % Change	FY2020 Budgeted	FY2019 Expenditures	FY2018 Expenditures	FY2017 Expenditures
HEALTH COMM - CABLE/INTERNET										179.22	
HEALTH WIRELESS COMMUNICATIONS	\$4,925.00	-\$75	-1.5%	\$750.00	\$5,675.00	\$675	13.5%	5,000.00	6,992.85	4,875.00	3,521.88
HEALTH PRINTING & MAILING	\$3,250.00			\$2,000.00	\$5,250.00	\$2,000	61.5%	3,250.00	3,041.41	1,869.77	1,263.50
HEALTH LEGAL NOTICES	\$4,000.00				\$4,000.00			4,000.00	1,700.00	1,200.00	2,400.00
HEALTH RECREATION											
HEALTH OTHER PURCHASED SERVICES	\$1,000.00				\$1,000.00			1,000.00	390.00	325.55	693.24
HEALTH OFFICE ENERGY SUPPLIES											
HEALTH OFFICE SUPPLIES	\$4,000.00	-\$250	-5.9%	\$1,000.00	\$5,000.00	\$750	17.6%	4,250.00	4,233.46	2,160.60	2,585.22
HEALTH BUILD & EQUIP SUPPLIES											
HEALTH CUSTODIAL SUPPLIES									22.53		
HEALTH GROUNDSKEEPING SUPPLIES											
HEALTH VEHICLE SUPPLIES											
HEALTH GASOLINE/DIESEL											
HEALTH FOOD & SERVICE SUPPLIES									2,085.01	2,272.19	1,260.12
HEALTH MEDICAL SUPPLIES	\$1,750.00	\$250	16.7%		\$1,750.00	\$250	16.7%	1,500.00			400.00
HEALTH EDUCATIONAL SUPPLIES											
HEALTH BUILD & EQUIP SUPPLIES											
HEALTH OTHER SUPPLIES	\$2,175.00			\$250.00	\$2,425.00	\$250	11.5%	2,175.00	23,542.49	10,156.34	7,592.55
HEALTH COMPUTER SUPPLIES & EQUIPMENT										9,086.69	11,993.22
HEALTH GOVERNMENTAL CHARGES	\$200.00	-\$50	-20.0%		\$200.00	-\$50	-20.0%	250.00	234.00	243.00	66.00
HEALTH CONF IN-STATE	\$2,500.00			\$375.00	\$2,875.00	\$375	15.0%	2,500.00	448.71	777.00	1,165.60
HEALTH MILEAGE	\$3,500.00			\$375.00	\$3,875.00	\$375	10.7%	3,500.00	3,373.20	4,429.47	3,962.35
HEALTH CONF OUT-STATE	\$5,500.00			\$1,050.00	\$6,550.00	\$1,050	19.1%	5,500.00	3,501.33	2,884.02	2,563.64
HEALTH DUES & MEMBERSHIPS	\$2,750.00			\$355.00	\$3,105.00	\$355	12.9%	2,750.00	2,550.00	2,748.00	1,305.00

Expenses	\$392,885.00	\$3,611	0.9%	\$47,155.00	\$440,040.00	\$50,766	13.0%	389,274.00	326,153.27	282,046.03	254,799.57
Health and Human Services	FY2021 DSR2 Request	BASE \$ Change from FY2020	BASE % Change	FY2021 DSR4 Request	FY2021 Total Request	Total \$ Change from FY2020	Total % Change	FY2020 Budgeted	FY2019 Expenditures	FY2018 Expenditures	FY2017 Expenditures
HEALTH OTHER EXPENSES									111.00		
AGING SERVICES ENERGY											
AGING SERVICES ELECTRIC											
AGING SERVICES OIL											
AGING SERVICES NATURAL GAS											
AGING SERVICES NON-ENERGY UTILITIES											
AGING SERVICES REPAIRS & MAINTENANCE											
AGING SERVICES R&M BUILDING											
AGING SERVICES R&M MEP											
AGING SERVICES HARDWARE MAINTENANCE AGREEMENTS											776.10
AGING SERVICES R&M EQUIP											
AGING SERVICES R&M VEHICLES									1,425.00	35.00	
AGING SERVICES RENTAL & LEASES											
AGING SERVICES SOFTWARE LICENSE & USER FEES											
AGING SERVICES OTHER PROPERTY RELATED SERVICES											
AGING SERVICES SOLID WASTE DISPOSAL											
AGING SERVICES PROFESSIONAL & TECHNICAL	\$8,000.00				\$8,000.00			8,000.00	5,400.00	1,820.00	
AGING SERVICES P&T SEM & TRAIN	\$2,000.00				\$2,000.00			2,000.00	709.00		
AGING SERVICES P&T SFTWR LIC FEE		-\$500	-100.0%			-\$500	-100.0%	500.00	4,665.00	1,360.00	990.00
AGING SERVICES P&T LIC PROF											
AGING SERVICES P&T LEGAL SVCS											
AGING SERVICES ADVERTISING											
AGING SERVICES COMMUNICATIONS											
AGING SERVICES POSTAGE	\$2,500.00	\$250	11.1%	\$500.00	\$3,000.00	\$750	33.3%	2,250.00	1,157.16	43.75	370.20

Expenses	\$392,885.00	\$3,611	0.9%	\$47,155.00	\$440,040.00	\$50,766	13.0%	389,274.00	326,153.27	282,046.03	254,799.57
Health and Human Services	FY2021 DSR2 Request	BASE \$ Change from FY2020	BASE % Change	FY2021 DSR4 Request	FY2021 Total Request	Total \$ Change from FY2020	Total % Change	FY2020 Budgeted	FY2019 Expenditures	FY2018 Expenditures	FY2017 Expenditures
AGING SERVICES COMM - LANDLINE											
AGING SERVICES COMM - CABLE/INTERNET											
AGING SERVICES WIRELESS COMMUNICATIONS	\$4,250.00	\$1,300	44.1%		\$4,250.00	\$1,300	44.1%	2,950.00	1,205.76		
AGING SERVICES PRINTING & MAILING	\$2,250.00				\$2,250.00			2,250.00	1,059.23	352.07	510.50
AGING SERVICES LEGAL NOTICES											
AGING SERVICES RECREATION	\$28,000.00			\$24,000.00	\$52,000.00	\$24,000	85.7%	28,000.00	917.67	350.36	675.00
AGING SERVICES OTHER SERVICES									263.54		
AGING SERVICES ENERGY SUPPLIES											
AGING SERVICES OFFICE SUPPLIES	\$3,000.00				\$3,000.00			3,000.00	4,502.19	2,000.00	994.82
AGING SERVICES BUILD & EQUIP SUPPLIES											
AGING SERVICES CUSTODIAL SUPPLIES											
AGING SERVICES GROUNDSKEEPING SUPPLIES											
AGING SERVICES VEHICLE SUPPLIES	\$2,750.00	-\$250	-8.3%		\$2,750.00	-\$250	-8.3%	3,000.00			
AGING SERVICES GASOLINE/DIESEL	\$9,500.00	-\$500	-5.0%		\$9,500.00	-\$500	-5.0%	10,000.00	6,217.00	5,205.05	3,000.00
AGING SERVICES FOOD & SERVICE SUPPLIES	\$300.00				\$300.00			300.00	1,529.64		486.37
AGING SERVICES MEDICAL SUPPLIES	\$150.00				\$150.00			150.00			
AGING SERVICES EDUCATIONAL SUPPLIES											
AGING SERVICES PUBLIC WORKS SUPPLIES											
AGING SERVICES OTHER SUPPLIES & EQUIPMENT	\$1,750.00			\$500.00	\$2,250.00	\$500	28.6%	1,750.00	171.76	1,032.00	
AGING SERVICES GOVERNMENTAL CHARGES									164.00	173.00	
AGING SERVICES CONF IN-STATE	\$1,000.00				\$1,000.00			1,000.00	41.80		
AGING SERVICES MILEAGE	\$1,100.00				\$1,100.00			1,100.00	327.32		
AGING SERVICES CONF OUT-STATE											
AGING SERVICES DUES & MEMBERSHIPS	\$1,500.00				\$1,500.00			1,500.00	200.00	1,299.60	1,730.00

Expenses	\$392,885.00	\$3,611	0.9%	\$47,155.00	\$440,040.00	\$50,766	13.0%	389,274.00	326,153.27	282,046.03	254,799.57
Health and Human Services	FY2021 DSR2 Request	BASE \$ Change from FY2020	BASE % Change	FY2021 DSR4 Request	FY2021 Total Request	Total \$ Change from FY2020	Total % Change	FY2020 Budgeted	FY2019 Expenditures	FY2018 Expenditures	FY2017 Expenditures
AGING SERVICES OTHER EXPENSES	\$500.00	\$500			\$500.00	\$500			974.37	225.00	228.15
YOUTH AND FAMILY SERVICES ENERGY											
YOUTH AND FAMILY SERVICES ELECTRIC											
YOUTH AND FAMILY SERVICES OIL											
YOUTH AND FAMILY SERVICES NATURAL GAS											
YOUTH AND FAMILY SERVICES NON-ENERGY UTILITIES											
YOUTH AND FAMILY SERVICES REPAIRS & MAINTENANCE											
YOUTH AND FAMILY SERVICES R&M BUILDING											
YOUTH AND FAMILY SERVICES R&M MEP											
YOUTH AND FAMILY SERVICES HARDWARE MAINT AGREE											
YOUTH AND FAMILY SERVICES R&M EQUIP											
YOUTH AND FAMILY SERVICES R&M VEHICLES											
YOUTH AND FAMILY SERVICES RENTAL & LEASES											
YOUTH AND FAMILY SERVICES SOFTWARE LIC & USER FEES											
YOUTH AND FAMILY SERVICES OTHR PROP REL SVCS											
YOUTH AND FAMILY SERVICES SOLID WASTE DISPOSAL											
YOUTH AND FAMILY SERVICES PROFESSIONAL & TECHNICAL	\$8,500.00				\$8,500.00			8,500.00	5,970.00	1,500.00	1,500.00
YOUTH AND FAMILY SERVICES P&T SEM & TRAIN	\$1,800.00				\$1,800.00			1,800.00	3,408.97	654.99	492.67
YOUTH AND FAMILY SERVICES P&T SFTWR LIC FEE											
YOUTH AND FAMILY SERVICES P&T LIC PROF											
YOUTH AND FAMILY SERVICES P&T LEGAL SVCS											
YOUTH AND FAMILY SERVICES ADVERTISING											
YOUTH AND FAMILY SERVICES COMMUNICATIONS											
YOUTH AND FAMILY SERVICES POSTAGE	\$1,000.00				\$1,000.00			1,000.00	325.21	254.76	139.20

Expenses	\$392,885.00	\$3,611	0.9%	\$47,155.00	\$440,040.00	\$50,766	13.0%	389,274.00	326,153.27	282,046.03	254,799.57
Health and Human Services	FY2021 DSR2 Request	BASE \$ Change from FY2020	BASE % Change	FY2021 DSR4 Request	FY2021 Total Request	Total \$ Change from FY2020	Total % Change	FY2020 Budgeted	FY2019 Expenditures	FY2018 Expenditures	FY2017 Expenditures
YOUTH AND FAMILY SERVICES COMM - LANDLINE											
YOUTH AND FAMILY SERVICES COMM - CABLE/INTERNET											
YOUTH AND FAMILY SERVICES WIRELESS COMMUNICATIONS	\$1,975.00	\$275	16.2%		\$1,975.00	\$275	16.2%	1,700.00	1,861.63	1,240.00	1,223.76
YOUTH AND FAMILY SERVICES PRINTING & MAILING	\$400.00				\$400.00			400.00	200.00	115.50	239.98
YOUTH AND FAMILY SERVICES LEGAL NOTICES											
YOUTH AND FAMILY SERVICES RECREATION											
YOUTH AND FAMILY SERVICES OTHER PURCHASED SERVICES											81.00
YOUTH AND FAMILY SERVICES ENERGY SUPPLIES											
YOUTH AND FAMILY SERVICES OFFICE SUPPLIES	\$800.00				\$800.00			800.00	1,150.32	416.61	546.70
YOUTH AND FAMILY SERVICES BUILD & EQUIP SUPPLIES											
YOUTH AND FAMILY SERVICES CUSTODIAL SUPPLIES											
YOUTH AND FAMILY SERVICES GRNDSKPG SUPPLIES											
YOUTH AND FAMILY SERVICES VEHICLE SUPPLIES											
YOUTH AND FAMILY SERVICES GASOLINE/DIESEL											
YOUTH AND FAMILY SERVICES FOOD & SVC SUPPLIES	\$2,200.00	\$1,000	83.3%		\$2,200.00	\$1,000	83.3%	1,200.00	2,464.67	332.43	553.69
YOUTH AND FAMILY SERVICES MEDICAL SUPPLIES											
YOUTH AND FAMILY SERVICES EDUCATIONAL SUPPLIES											
YOUTH AND FAMILY SERVICES PUBLIC WORKS SUPPLIES											
YOUTH AND FAMILY SERVICES OTHR SUPPLIES & EQUIP	\$3,250.00	\$500	18.2%		\$3,250.00	\$500	18.2%	2,750.00	439.52		187.97
YOUTH AND FAMILY SERVICES GOVERNMENTAL CHGS	\$800.00				\$800.00			800.00	354.00		
YOUTH AND FAMILY SERVICES CONF IN-STATE	\$1,500.00				\$1,500.00			1,500.00	98.50	10.00	
YOUTH AND FAMILY SERVICES MILEAGE	\$1,300.00				\$1,300.00			1,300.00	1,322.97	1,123.37	418.99
YOUTH AND FAMILY SERVICES CONF OUT-STATE	\$3,000.00				\$3,000.00			3,000.00	1,414.01		
YOUTH AND FAMILY SERVICES DUES & MEMBERSHIPS	\$1,000.00				\$1,000.00			1,000.00			85.00

Expenses	\$392,885.00	\$3,611	0.9%	\$47,155.00	\$440,040.00	\$50,766	13.0%	389,274.00	326,153.27	282,046.03	254,799.57
Health and Human Services	FY2021 DSR2 Request	BASE \$ Change from FY2020	BASE % Change	FY2021 DSR4 Request	FY2021 Total Request	Total \$ Change from FY2020	Total % Change	FY2020 Budgeted	FY2019 Expenditures	FY2018 Expenditures	FY2017 Expenditures
YOUTH AND FAMILY SERVICES											
OTHER EXPENSES										65.56	92.73
VETERANS' SVCS ENERGY									500.00		
VETERANS' SVCS ELECTRIC											
VETERANS' SVCS OIL											
VETERANS' SVCS NATURAL GAS											
VETERANS' SVCS NON-ENERGY UTILITIES											
VETERANS' SVCS REPAIRS & MAINT											
VETERANS' SVCS R&M BUILDING											
VETERANS' SVCS R&M MEP											
VETERANS' SVCS HRDWR MAINT AGREE											
VETERANS' SVCS R&M EQUIP											
VETERANS' SVCS R&M VEHICLES											
VETERANS' SVCS RENTAL & LEASES											
VETERANS' SVCS SFTWR LIC & USER FEE											
VETERANS' SVCS OTHR PROP REL SVCS	\$1,400.00				\$1,400.00			1,400.00	1,500.00	1,500.00	1,500.00
VETERANS' SVCS SOLID WASTE DISPOSAL											
VETERANS' SVCS PROF & TECH											
VETERANS' SVCS P&T SEM & TRAIN											
VETERANS' SVCS P&T SFTWR LIC FEE											
VETERANS' SVCS P&T LIC PROF											
VETERANS' SVCS P&T LEGAL SVCS											
VETERANS' SVCS ADVERTISING											
VETERANS' SVCS COMMUNICATIONS											
VETERANS' SVCS POSTAGE	\$100.00				\$100.00			100.00	11.77	8.82	18.99

Expenses	\$392,885.00	\$3,611	0.9%	\$47,155.00	\$440,040.00	\$50,766	13.0%	389,274.00	326,153.27	282,046.03	254,799.57
Health and Human Services	FY2021 DSR2 Request	BASE \$ Change from FY2020	BASE % Change	FY2021 DSR4 Request	FY2021 Total Request	Total \$ Change from FY2020	Total % Change	FY2020 Budgeted	FY2019 Expenditures	FY2018 Expenditures	FY2017 Expenditures
VETERANS' SVCS COMM - LANDLINE											
VETERANS' SVCS COMM - LANDLINE											
VETERANS' SVCS WIRELESS COMMUNICATI											
VETERANS' SVCS PRINTING & MAILING											
VETERANS' SVCS LEGAL NOTICES											
VETERANS' SVCS RECREATION	\$500.00				\$500.00			500.00			
VETERANS' SVCS OTHR PURCH OF SVCS											
VETERANS' SVCS ENERGY SUPPLIES											
VETERANS' SVCS OFFICE SUPPLIES	\$100.00				\$100.00			100.00			
VETERANS' SVCS BUILD & EQUIP SUPPLI											
VETERANS' SVCS CUSTODIAL SUPPLIES											
VETERANS' SVCS GRNDSKPG SUPPLIES											
VETERANS' SVCS VEHICLE SUPPLIES											
VETERANS' SVCS GASOLINE/DIESEL											
VETERANS' SVCS FOOD & SVC SUPPLIES										500.00	500.00
VETERANS' SVCS MEDICAL SUPPLIES											
VETERANS' SVCS EDUCATIONAL SUPPLIES											
VETERANS' SVCS PUBLIC WORKS SUPPLIE											
VETERANS' SVCS OTHR SUPPLIE & EQUIP	\$4,000.00				\$4,000.00			4,000.00	3,138.19	3,673.69	3,760.00
VETERANS' SVCS GOVERNMENTAL CHGS	\$82,500.00	-\$290	-0.4%		\$82,500.00	-\$290	-0.4%	82,790.00	71,384.00	70,575.00	71,210.00
VETERANS' SVCS CONF IN-STATE											
VETERANS' SVCS MILEAGE	\$100.00				\$100.00			100.00			
VETERANS' SVCS CONF OUT-OF-STATE											
VETERANS' SVCS DUES & MEMBERSHIPS	\$60.00				\$60.00			60.00			

Expenses	\$392,885.00	\$3,611	0.9%	\$47,155.00	\$440,040.00	\$50,766	13.0%	389,274.00	326,153.27	282,046.03	254,799.57
Health and Human Services	FY2021 DSR2 Request	BASE \$ Change from FY2020	BASE % Change	FY2021 DSR4 Request	FY2021 Total Request	Total \$ Change from FY2020	Total % Change	FY2020 Budgeted	FY2019 Expenditures	FY2018 Expenditures	FY2017 Expenditures
VETERANS' SVCS VETERANS' BENEFITS	\$48,000.00	-\$389	-0.8%		\$48,000.00	-\$389	-0.8%	48,389.00	25,000.00	28,500.00	15,000.00
VETERANS' SVCS OTHER EXPENSES											



**Board of Health
TOWN OF NEEDHAM
AGENDA FACT SHEET**



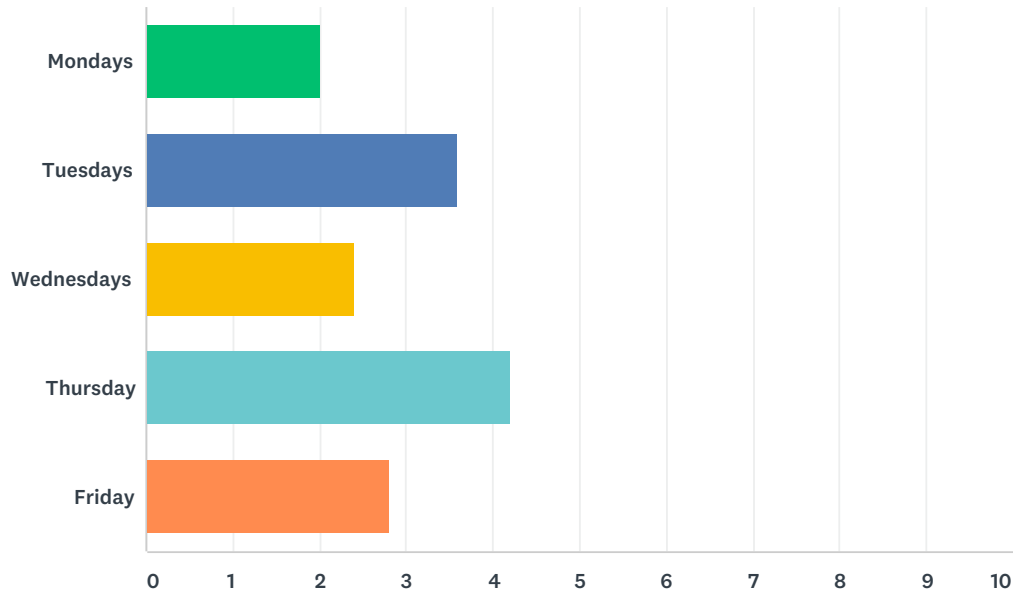
MEETING DATE: 11/08/2019

Agenda Item	Discuss BOH Meeting Times and Set Initial 2020 Meeting Dates and Times
Presenter(s)	Timothy Muir McDonald, Director of Health & Human Services

1.	BRIEF DESCRIPTION OF TOPIC TO BE DISCUSSED
The Board of Health will review its existing tobacco vendors and their locations, discuss youth use of tobacco and e-cigarettes, and discuss the use of regulations and the number and location of tobacco vendors as ways in which to combat tobacco and e-cigarette use in the community.	
2.	VOTE REQUIRED BY BOARD OF HEALTH
No vote is required.	
3.	BACK UP INFORMATION ATTACHED
The results from a brief survey of the five Board of Health about meeting times, days, and frequency will be discussed, and a 2020 BOH meeting schedule will be determined.	

Q1 Please rank your preferences for future BOH meeting days (of the week)?

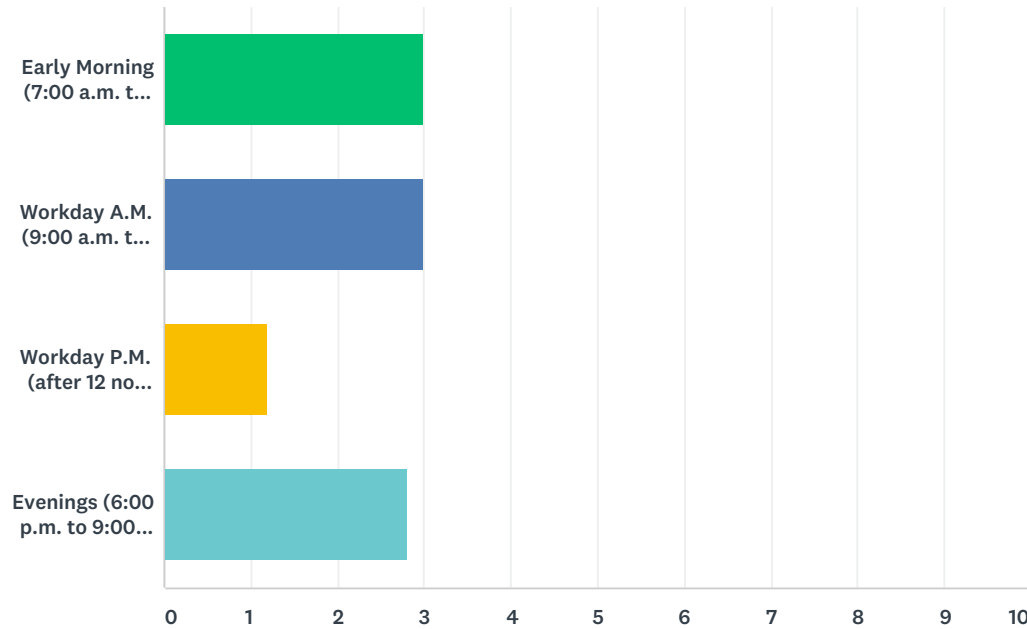
Answered: 5 Skipped: 0



	1	2	3	4	5	TOTAL	SCORE
Mondays	20.00% 1	0.00% 0	0.00% 0	20.00% 1	60.00% 3	5	2.00
Tuesdays	20.00% 1	40.00% 2	20.00% 1	20.00% 1	0.00% 0	5	3.60
Wednesdays	0.00% 0	0.00% 0	40.00% 2	60.00% 3	0.00% 0	5	2.40
Thursday	40.00% 2	40.00% 2	20.00% 1	0.00% 0	0.00% 0	5	4.20
Friday	20.00% 1	20.00% 1	20.00% 1	0.00% 0	40.00% 2	5	2.80

Q2 Please rank your preference for the times of day of future BOH meetings?

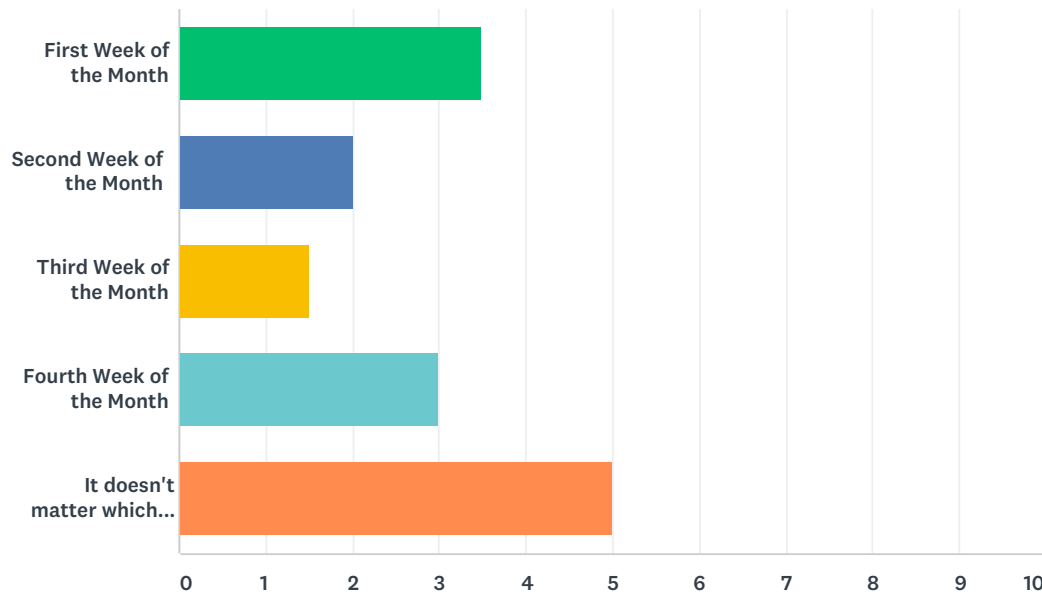
Answered: 5 Skipped: 0



	1	2	3	4	TOTAL	SCORE
Early Morning (7:00 a.m. to 9:00 a.m.)	60.00% 3	0.00% 0	20.00% 1	20.00% 1	5	3.00
Workday A.M. (9:00 a.m. to 12 noon)	20.00% 1	60.00% 3	20.00% 1	0.00% 0	5	3.00
Workday P.M. (after 12 noon to 6:00 p.m.)	0.00% 0	0.00% 0	20.00% 1	80.00% 4	5	1.20
Evenings (6:00 p.m. to 9:00 p.m.)	20.00% 1	40.00% 2	40.00% 2	0.00% 0	5	2.80

Q3 Please rank your preferences of when, during a course of a month, the BOH should meet?

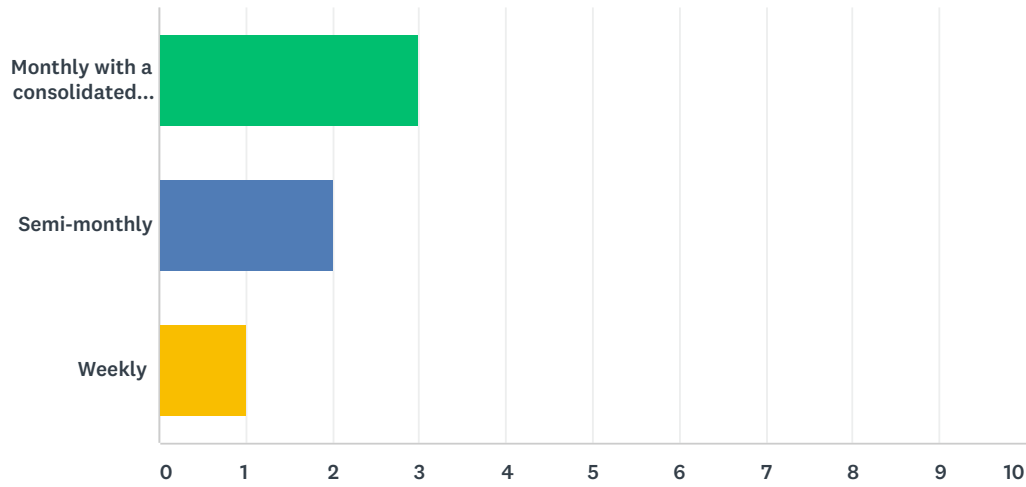
Answered: 5 Skipped: 0



	1	2	3	4	5	TOTAL	SCORE
First Week of the Month	0.00% 0	50.00% 1	50.00% 1	0.00% 0	0.00% 0	2	3.50
Second Week of the Month	0.00% 0	0.00% 0	50.00% 1	0.00% 0	50.00% 1	2	2.00
Third Week of the Month	0.00% 0	0.00% 0	0.00% 0	50.00% 1	50.00% 1	2	1.50
Fourth Week of the Month	0.00% 0	50.00% 1	0.00% 0	50.00% 1	0.00% 0	2	3.00
It doesn't matter which week	100.00% 5	0.00% 0	0.00% 0	0.00% 0	0.00% 0	5	5.00

Q4 Please rank your preferences for BOH meeting frequency?

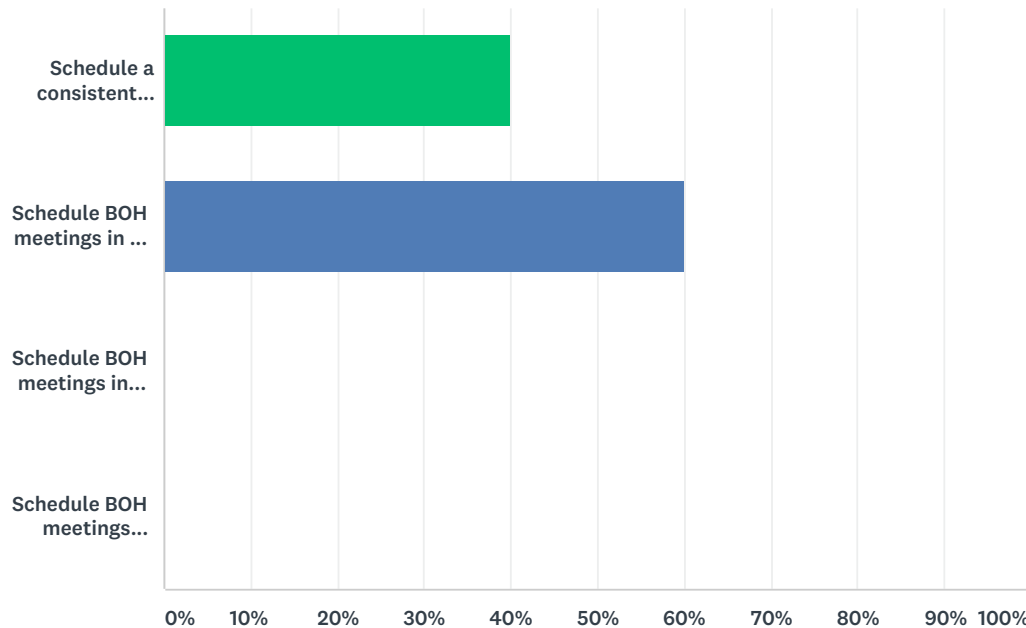
Answered: 5 Skipped: 0



	1	2	3	TOTAL	SCORE
Monthly with a consolidated summer meeting (combining July and August into one meeting)	100.00% 5	0.00% 0	0.00% 0	5	3.00
Semi-monthly	0.00% 0	100.00% 5	0.00% 0	5	2.00
Weekly	0.00% 0	0.00% 0	100.00% 5	5	1.00

Q5 Would you prefer to set a specific recurring meeting time (like the second Friday of the month at 7:00 a.m.) for the year, or do you prefer to schedule out Board of Health meetings in smaller segments? Please select your top choice.

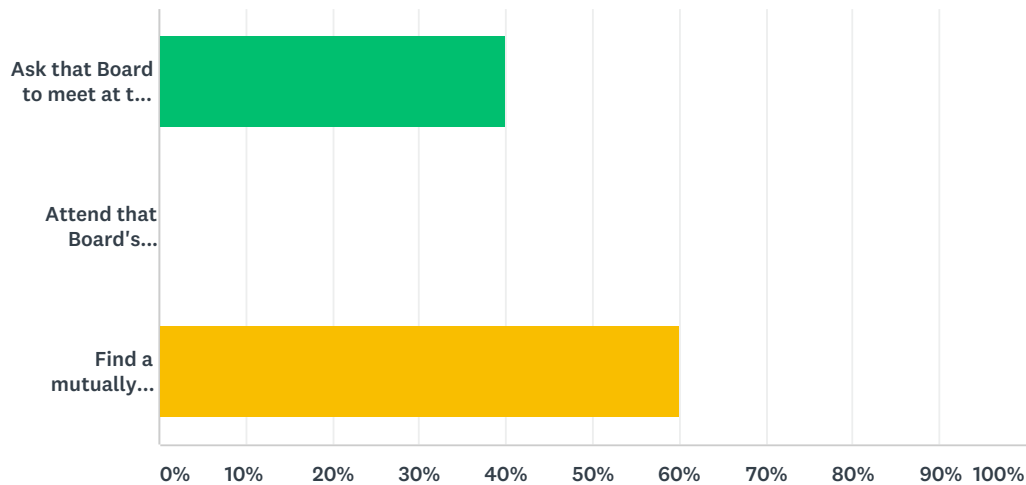
Answered: 5 Skipped: 0



ANSWER CHOICES	RESPONSES	
Schedule a consistent meeting time for the year	40.00%	2
Schedule BOH meetings in six month blocks	60.00%	3
Schedule BOH meetings in three month blocks	0.00%	0
Schedule BOH meetings month-to-month	0.00%	0
TOTAL		5

Q6 If there is a need to meet publicly with another elected Board (Select Board or Planning Board, for example) would you...

Answered: 5 Skipped: 0



ANSWER CHOICES	RESPONSES	
Ask that Board to meet at the established BOH meeting time? (making that inter-Board discussion a large part of the month's BOH agenda)	40.00%	2
Attend that Board's standard meeting time? (thus preserving the regular BOH meeting for other business)	0.00%	0
Find a mutually convenient time at which to schedule an unplanned joint meeting.	60.00%	3
TOTAL		5



NEEDHAM DRUG TAKE-BACK DAY

Don't let your unwanted or expired drugs fall into the wrong hands.

WHAT

Safely dispose of your unwanted, unused and expired drugs to avoid improper use

WHEN

Saturday, October 26, 2019
10:00am to 2:00pm

WHERE

Needham Town Common
Drive through drop-off on
Garrity Way

Know Before You Go:

- Check your home for unused over-the-counter and prescription medications

Needles, thermometers, medical waste or illegal drugs such as cocaine or marijuana will not be accepted*

- Check the expiration dates on all medications

*Needle disposal available at Needham RTS

LOCALS FAIRS AND FESTIVALS

OCT. 17-31

KING RICHARD'S FAIRE — Aug. 31-Oct. 20, including Labor Day and Columbus Day, 235 Main St., Carver. Gates open at 10:30 a.m. and close at 6 p.m. Kings and queens, knights and jugglers, tigers and jousts, and plenty more. Information: <https://king-richardsfaire.net/>

'SLEEPY HOLLOW' EXPERIENCE

— Sept. 27-Nov. 3, Old Sturbridge Village, 1 Old Sturbridge Village Road. The interactive, musical-theatre-style outdoor experience is the village's most popular fall event, reimagining Washington Irving's legendary tale using the historic village as its haunting backdrop. Information: www.osv.org.

BAZAAR AND FOOD FAIR — Oct. 18 and 19, 10 a.m.-9 p.m., and Oct. 20, noon-3 p.m., St. George Antiochian Orthodox Church of Boston, 55 Emmonsedale Road, West Roxbury. Free admission. Full kitchen service and take-out available. Authentic Middle Eastern cuisine and pastry, American foods and pastry, country store, photo booth, white elephant table and much more. Information: 617-327-6500.

APPLE AND AGRICULTURAL DAYS

— Oct. 19, 9 a.m.-4 p.m., Old Sturbridge Village, Sturbridge. Visit and learn how food makes its way from the farm to the dining room table in 19th century New England life. Explore the village, take a tour of gardens and root cellars, and meet the oxen as additional guest teams arrive at the village to plow and demonstrate field preparation. Witness the apple harvest — one of the most popular items of fall. Apples at the village are selected and fermented to get "squeezing" from the fruit, a process that produces a different variation than the sweet cider typically recognized at today's farm stands.

Activities are included with Standard Daytime Admission, a season pass, or membership to Old Sturbridge Village. Save \$2.50 per adult, senior or youth ticket when you purchase

online instead of at the ticket office. Purchase tickets by visiting <https://www.osv.org> or purchase one-day tickets at the ticket office.

CRAFT AFFAIR — Oct. 19, 9 a.m.-2:30 p.m., Norwood School. More than 80 vendors will be selling their handmade goods. Come and shop for chocolates, hand-painted ornaments, placemats, crocheted items, jewelry, dolls and decorative wooden cards, wreaths and more. The Craft Affair benefits the Norwood Prom Party and other school activities. General admission is \$13-adult. Senior citizens and children under 12 are free.

MARKET OF HOPE

— Oct. 19, 9 a.m.-3 p.m., group Timothy Parish, 650 Norwood. This market features products handmade from all over the world, purchases from the market to the needs of the market in our world and to lift themselves out of poverty and dependency. There is coffee and refreshments. In case of inclement weather, look for the market in the lower hall. For more information, please call Toni at 617-327-6500.

HARVEST FAIR

— Oct. 20, 10 a.m.-3 p.m., First Church, 327 Concord Road. Featuring activities for the entire family, admission is free. Collaborative art projects, birds and birdhouses, fall-themed baskets, fall decorations, hot treats, Thanksgiving more at the Silent environmental art organizations offering and opportunities to enjoy home-baked locally made jam bread while listening to music by Sally Sue Friends, as well as musician Mister. Children are welcome to the Enchanted Garden, a fairy house between 9 a.m. and 1 p.m. For more information, three speci-



Needham Division of Public Health, Karen Shannon, 781-455-7940 x215
Partnership of the Needham Public Health Division, Needham Police Department and the Substance Prevention Alliance of Needham (SPAN)

Highest CD Rates For Seniors

Search Highest CD Interest Rates - Highest Rates For Seniors Yahoo Search

Local Voices (https://Patch.com/Massachusetts/Needham/Small-Business-Voices)

Needham BOH Share Message About Tobacco Sales

The Board of Heath reflect on the decrease in youth smoking since the decision to increase the purchasing age of tobacco in town.

By Samantha Mercado, Patch Staff (https://patch.com/users/samantha-mercado)
Oct 3, 2019 12:28 pm ET

Like 1 Share (https://patch.com/massachusetts/needham/amp/28327149/needham-boh-share-message-about-tobacco-sales)

Reply

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The following was submitted to Patch as a Letter to the Editor from the Needham Board

of Health. If you would like to submit a letter to the editor, email:

samantha.mercado@patch.com.

An article in the journal Tobacco Control featured a study about teen smoking and the significant declines in that rate which have been achieved by increasing the minimum sales age for tobacco products to 21. The analysis done by the Educational Development Center in Waltham in collaboration with researchers at Brown University and Harvard Medical School, examined data from a biennial survey, supported by the MetroWest Health Foundation, of youth actions and perceptions in 25 cities and towns outside of Boston.

Needham was the first municipality in the nation to increase the purchase age for tobacco products to 21, and unsurprisingly the recent study found that the Town has achieved tremendous success in lowering the rate of smoking in teenagers. The Commonwealth of Massachusetts has also made this minimum sales age increase to 21 for tobacco and nicotine delivery products a law effective as of December 31, 2018.

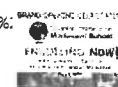
OPEN



Featured Events (1) (/what-is-featured-event)



Oct 5
**Parkinson's
Foundation Moving
Day Boston**
(https://patch.com/r
foundation-moving-
day-boston)



+ Add your event



See More Events Near You >

(https://patch.com/massachusetts/needham/calendar)





Get Your Dog To Listen

Try this free exercise to get your dog to calm down, listen and obey. thedogtrainingsecret.com

OPEN

The Public Health Division's staff members currently work cooperatively with the Needham Police Department to conduct routine Tobacco Compliance Checks as part of the Town's on-going tobacco prevention efforts. Compliance checks occur at each of the ten licensed tobacco vendors at least four times a year to verify that all businesses and their staff members are following the proper protocols by asking the buyer for a valid ID and not selling tobacco products to anyone under the age of 21.

The Public Health Division and the Police Department are happy to report that during our recent Compliance Checks conducted in September 2019 there were no sales to persons less than 21 years of age! As Assistant Director of Public Health, I want to thank the town's licensed tobacco vendors for following the strict tobacco buyer screening protocols, asking the customer for a valid ID, and for verifying that all purchasers are at least 21 years of age. We appreciate all your hard work in providing the on-going training to your employees that sell tobacco products. It is making a difference so please keep up the great work!

Subscribe > (/)

Due to these routine compliance checks, along with the Board of Health's regulatory decision to increase the age at which youth may purchase tobacco products in 2005, there has been a dramatic decrease in Needham High School student smoking rates. From 2006 to 2010, smoking rates among high schoolers in Needham dropped from 13 percent to 7 percent, a significantly greater decline than in neighboring communities where teen smoking rates dipped from 15 percent to 12 percent, the study found. Smoking rates dropped even further between 2010 and 2012, falling to 5.5 percent in Needham and 8.5 percent in the neighboring communities. The declines have continued since, with 2018 data showing that the current smoking rate among high schoolers in Needham is now at 2.4%.

These declines in youth smoking in Needham have positive health consequences, for both the youth of Needham and the community as a whole. Cigarette smoking has been identified by researchers and health officials as the most important source of preventable morbidity (disease and illness) and premature mortality (death) worldwide, and smoking-related diseases claim an estimated 443,000 American lives each year, including those affected indirectly, such as babies born prematurely due to prenatal maternal smoking and victims of "secondhand" exposure to tobacco's carcinogens.

Our routine Tobacco Compliance Checks, which have to date typically included the non-traditional nicotine delivery products like E-Cigarettes and Vape cartridge refills, will continue to be conducted in Needham, but due to Governor Charlie Baker's declaration of the recent Vaping public health emergency (<https://www.mass.gov/guides/vaping-public-health-emergency>) issued on September 24, 2019, the sale of all vaping products are currently banned for four months in Massachusetts through January 25, 2020. All retail tobacco establishments in Needham, including the Registered Medical Marijuana Dispensary, have voluntarily removed all E-Cigarette and Vape products off their

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Single Family Home For Sale in Newton Corner

(/massachusetts/needham/classifieds/olc-services/106064/music-lessons-with-wellesley-school-of-music)
family-home-for-sale-in-newton-corner)
Added by Marilyn Valles



Music Lessons with Wellesley School of Music

(/massachusetts/needham/classifieds/olc-services/106064/music-lessons-with-wellesley-school-of-music)
Added by Sophie Bozok

+ Add your classified



How To Get Rid Of Crepey Skin

Over 100,000 used this to firm their crepey skin. You shouldn't be left out.

City Beauty

Open >

Needham Community Calendar

OCTOBER 2019



shelves as a result of this ban. We plan to continue with these compliance checks by including the traditional tobacco products until the ban is lifted. We appreciate your continued cooperation!

♡ Like 😊 Thank 💬 Reply



More from Needham



Needham MCAS Results: Schools Perform Better Than State Average (<https://patch.com/massachusetts/needham/needham-mcas-results-schools-perform-better-state-average>)

6d



BOS Want To Know: Should Needham Become A Green Community? (<https://patch.com/massachusetts/needham/bos-want-know-should-needham-become-green-community>)

2d



Needham's 'The Tapples' Play Back To School

Concert (<https://patch.com/massachusetts/needham/needhams-tapples-play-back-school-concert>)

Sep 23

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patch&utm_campaign=2899660&utm_term=Take+A+Look+At+Who+Jay+Leno+Is+Married+To+Today&utm_content=http%3A%2F%2Fcdn.ta
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SUN	MON	TUE	WED	THU	FRI	SAT
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

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HEALTH

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Health head on vape ban, EEE

McDonald addresses current public health crises

By Trevor Ballantye
Wicken Local

Needham Public Health Director Timothy McDonald sat down with the Needham Times on Wednesday to talk about how his department will enforce a 4-month ban on vaping products imposed by Governor Charlie Baker this week.

He also provided an update on how the town is monitoring the threat posed by the Eastern equine encephalitis (EEE) virus.

Here is what he wants you to know about the two emerging health crises:

Needham Public Health has the resources to enforce Gov. Baker's vaping ban.

"Other communities have a lot more vendors and have smaller health departments," McDonald noted. "We have the resources to go enforce [the ban] and we already have."

The morning after Baker issued the ban, McDonald said his department called vendors in town selling vaping products and followed up with visits to each location to ensure the products were removed from their shelves.

There are ten licensed tobacco retailers in Needham, but only five of those locations sell vaping products.

"We are going to continue to work with vendors to make sure they are compliant," McDonald said. "We are also going to push prevention messaging - especially youth prevention

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messaging - because if you look at the rates of youth vaping, obviously [young people] are the primary driver of usage."

Even without reliable data on vaping use, the jury is in on the effects of nicotine:

Long-term studies support conclusions around the smoking of combustible tobacco, but when it comes to vaping tobacco, McDonald said, there is a belief that "the reasons this is happening to people is because they bought illicit, black market products."

"I don't give that quite as much credence as others do," McDonald said. "There is not great data right now about all of the ingredients and the long-term exposure set."

According to McDonald, studies show that in most people the brain continues to develop up to age 25. That means young people are particularly susceptible to nicotine addiction.

About a month ago, Needham Public Health started a vaping task force with several community partners and McDonald says his staff works with schools to develop and deliver public messaging and curriculum aimed at educating young people on the harms of nicotine use.

But no matter how old a person is, and regardless of if they are using combustible cigarettes, electronic cigarettes, chewing tobacco or vaping products, all of it has a negative impact on your health.

"We want to throw a caution out there that being addicted to nicotine is a problem for anyone, regardless of age," McDonald said.

"The people who are currently using [vaping products] really should stop and consider if they understand the full health outcomes."

Smoking cessation therapies are easier to access as a result of the ban:

"One of the things that accompanied the Governor's public health emergency declaration was a standing order signed by the Commissioner of Public Health that mandates insurance coverage for smoking cessation therapies and doesn't require a doctor's prescription," McDonald said.

In lieu of vaping products, other alternatives, including the prescription smoking cessation medicine Chantix, can be used to help tobacco users kick the habit.

Some people advocate for e-cigarettes and vaping as a replacement for smoking," McDonald said. "I think the most

important thing to understand is that [vaping products] have significant nicotine content - and nicotine is incredibly addictive."

On EEE, "Needham is at low risk."

The town is fortunate that its threat level has not increased, "because if you look at the areas just south and west of us - Medfield, Holliston, Ashland and Framingham - they are at critical risk," McDonald said.

Risk levels are based on a couple of factors. If a community has a human case of EEE or a mammal case, such as a horse, risk factors are elevated.

"We have not had a human case, and we have not had a case in a mammal," he said.

Each community sets mosquito traps and regularly sends insect samples to a state laboratory in Jamaica Plain for testing. If the virus is found in one of those samples, the community's risk level will be elevated.

"There are not a ton of mosquitoes that are getting caught," McDonald reported. "And if they are getting caught, they most likely don't have EEE."

Residents should still take precautions.

"I think the challenge is that it's still a little bit warm for fall, the only way that we will sort of have a clear end to the dangerous seasons is when we have a hard frost," McDonald said. "It's getting down to the 50's at night, but that's still a long way away [from a hard frost]."

A "hard frost" will occur when the temperature stays below 28 degrees for a period of 2 hours, or below 32 degrees for a period of three hours. Until then, McDonald recommends residents wear long sleeves and pants if they are going out in the evening hours.

"If you are not going to do that," McDonald said, "or even if you are - you should wear an EPA approved mosquito repellent with DEET."

Times 10/3/19

Health Department offering flu clinics

The Needham Health Department will be having seasonal flu clinics on:

Thursday, October 10, from 11 a.m. to 2 p.m., at the Rosemary Recreation Complex (178 Rosemary St); Thursday, October

17, from 1-4 p.m., at the Center at the Heights (300 Hillside Ave); and Saturday, November 2, from 11 a.m. to 2 p.m., at the Rosemary Recreation Complex (178 Rosemary St).

The clinics are for those 18 years

and older. Attendees are asked to bring all insurance cards - Medicare cards included - as the Health Department will be billing insurance.

The Needham Public Health Department will be offering subsequent seasonal influenza vaccine clinics. Questions may be directed to the Needham Public Health Department at (781-455-7940) or www.needhamma.gov/health.

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