

CITY OF PORTLAND, MAINE
Standing Committee on Sustainability and Transportation
Councilor Spencer Thibodeau (D2), Chair
Councilor Belinda Ray (D1)
Councilor Jill Duson (D3)

Agenda
May 20, 2020
5:30 PM
Remote Meeting

1. Meeting Information

*On Wednesday, May 20, 2020, at 5:30 pm, the Sustainability and Transportation Committee will conduct a virtual meeting using emergency legislation approved by LD 2167; 1 M.R.S. §403-A, that authorizes cities and towns to conduct meetings online. This workshop will be conducted remotely using Zoom. Allow your computer to install the free Zoom app to get the best meeting experience. We hope to be able to offer other live-stream methods in the future. If you are not able to attend live, we will be posting a recording of the meeting once it has concluded. The link for the meeting is below:
<https://us02web.zoom.us/j/85071670929?pwd=RUpxYVhlcURjSkdMT0xyNE8yOFd4Zz09>
Password: 147710 For public comment, you will need to use the "raise your hand" feature. To raise your hand via the telephone, please hit *9. You will be un-muted by the host when it is time for public comment.*

2. Review and approve minutes from April 15

a. Draft Minutes from April 15

3. Sustainability Program Updates

a. May Updates

4. Presentation and Discussion

Public comment may be taken

a. Presentation by Maine Department of Transportation Commissioner Bruce Van Note regarding the Portland Transportation Center.

Discussion only. No public comment will be taken on this item.

b. Review of the Draft Commercial Street Operations and Master Plan Recommendation

Discussion only. No public comment taken on this item.

c. Heritage Tree Ordinance

The Committee reviewed a previous draft of the Heritage Tree Ordinance. Staff have worked with Corporation Counsel to incorporate their comments.

The Committee will take public comment on this item before voting whether to recommend it to the City Council.

d. Update on Air Quality Monitoring

Discussion only. No public comment will be taken on this item.

5. Other Business

CITY OF PORTLAND, MAINE

Standing Committee on Sustainability and Transportation

Councilor Spencer Thibodeau (D2), Chair

Councilor Belinda Ray (D1)

Councilor Jill Duson (At large)

Draft Minutes April 15, 2020

Members Present: Councilor Thibodeau, Councilor Ray, Councilor Duson

Staff Present: Troy Moon, Ashley Krulik

Meeting was called to order at 5:40 PM.

Move and approve minutes: Councilor Ray moved to approve, Councilor Duson seconded, all in favor, 3-0.

Sustainability Program Updates

Troy Moon reviewed the items on the Sustainability Updates memo.

- Councilor Ray
 - Timeline for retiring or selling solar recs? Mr. Moon - it is an annual decision.
 - Next meeting - get an update on AV conversation and Metro involvement, Mr. Moon - Lena has been in contact with Greg Jordan; notification of Waterville St. residents about parking program and update from Parking division on program - working on parking app to include updates;
- Councilor Thibodeau
 - Can we look at whether there is any dropoff in recycling given that the City is no longer requiring purple bags? Mr. Moon - we can look at the data at the next meeting.
 - Will discuss with Mayor and City Manager about when we bring Action Items back to the S&T agenda

Greenhouse Gas Inventory

Troy Moon presented Memo from Competitive Energy Services.

- Councilor Ray:
 - Shoutout to library for reducing their energy usage
 - What do you see as the trajectory from here? Mr. Moon - focus on electrifying building operations, increasing weatherization, make sure building control systems are top notch, switch interior lighting to LED, look at ways to combine heat and power systems in large buildings (such as the ice arena), work toward electrifying the fleet - getting our first heavy duty electric rolloff truck using VW settlement funds, growing light duty electric fleet

- In terms of the solar consortium - what impact will that have? Mr. Moon - if we retain recs, 20,000 MWH will be zero emissions, if we sell recs they will not work toward goal, but if we sell recs prior to climate goal deadline we can use those funds to support more efficiency initiatives
- What do recs sell for? Mr. Moon - becoming increasingly valuable, potentially \$25 each creating a potential revenue stream of several hundred thousand dollars
- Councilor Thibodeau:
 - What do we do with this data now? Look at where emissions are and what the low hanging fruit is to reduce them, consider projects that will be cost effective and make a big impact (interior LED lighting), getting rid of inefficient heating/cooling units and replace with heat pumps, update green building ordinance
- Councilor Duson:
 - Should isolate emergency shutdown period to make sure that it is not counted as a reduction in emissions

One Climate Future Progress Report

Troy Moon presented a PowerPoint presentation.

- Councilor Ray
 - Why are GHG emissions so much higher than the CES GHG report? Mr. Moon - these emissions are community-wide, while the CES report is just for City operations.
 - Looking at the different City pledges/goals - which are for city operations vs. community-wide? Mr. Moon - the only city-specific goal is 100% clean energy by 2040.
 - COVID-19 pandemic has had a huge impact on worldwide emissions - look closer at how it has impacted City operations and how we may be able to use learnings to keep emissions down
- Councilor Thibodeau
 - Connect on how to ensure public input on final report

PMAC Annual Report

Troy Moon presented a report memo.

- Councilor Thibodeau:
 - 22 applicators submitted reports out of how many? Mr. Moon - we do not currently have a database of the number of applicators in Portland.
 - Should think about how to ensure continued compliance.
- Councilor Duson:
 - Can we make the brochures available to retailers to communicate Portland rules? Mr. Moon - yes, that is on our outreach plan.
- Councilor Ray:
 - Should publish a list of applicators who reported

Public comment:

When will tree ordinance be taken up? Councilor Thibodeau: Hoping to take up action items in the next meeting. We do have a draft of the ordinance.

Motion was made by Councilor Ray to adjourn the meeting at 6:55 pm. Motion was seconded by Councilor Duson. All in favor: 3-0.

Sustainability Updates

May 2020

Straw Ordinance

The City of Portland Straw Ordinance went into effect on April 1, 2020. During this first phase of the ordinance food service establishments may only provide customers with a plastic straw upon request. We continue to hold off on education and outreach on this as restaurants address the Covid-19 crisis, although we note that many establishments are following it.

<http://www.portlandmaine.gov/2558/Straw-Ordinance>

Energy Benchmarking

Buildings with 20,000 square feet and a single primary occupant were required to report their energy and water consumption to the Sustainability Office by May 1, 2020. So far we have received reports from 31 businesses and are working with several others on their reports. We will issue a reminder and offer assistance in a couple of weeks as people are undoubtedly busy with issues related to the pandemic.

<http://www.portlandmaine.gov/2389/Energy-Benchmarking>

Pesticide Ordinance

We responded to concerns from residents about a pesticide application on the Western Prom by a City contractor. The application was made directly to the stumps of invasive Norway Maple trees that had been cut down. The application was very limited and was allowed by the pesticide ordinance. Unfortunately, the sign posted by the contractor did not meet the ordinance requirements. In response, we sent an email reminder about the requirements to all of the pesticide applicators that we have email addresses for.

We updated the website to include applicators who submitted reports as required by the ordinance.

The PMAC is discussing plans for an educational event (if possible) or (virtual campaign if necessary) in the Fall to demonstrate the most effective way to prepare your landscapes for the winter.

<http://www.portlandmaine.gov/2168/Pesticide-Use-Ordinance>

Sustainability Updates

May 2020

Solar Consortium

We've set up our first accounts with renewable energy suppliers who bid into the consortium project. Our first net energy bill (NEB) credits will start showing up on our electricity accounts in two or three months. This will continue over the next year to 18 months until all of the projects under development come on line. As we've mentioned previously, the NEB credits and the Renewable Energy Credits associated with them will provide the City with significant cost savings on electricity as well as a revenue stream from REC sales if the Council and Manager choose to monetize them.

Legislation

No updates because the legislature has not resumed.

One Climate Future

Before the pandemic we had scheduled a series of public engagement meetings during the month of April. We were able to retool our program for a series of five online meetings. They turned out to be very successful and quite popular. The smallest meeting had eleven participants and the largest had 22.

We met with several staff members from the Governor's Office for Innovation and the Future to share ideas about public education strategies. Some of them have attended OCF events, as well. We agreed to continue sharing ideas in hopes that we can align the State climate action plan with ours.

We'll be closing OCF Survey #3 shortly. We've had almost 550 respondents - which is impressive for a 22 page survey. Combined, the three OCF surveys garnered over 4,000 responses.

We have begun work on the first draft of the OCF plan. We're incorporating input we have gathered from City staff in several departments and many residents and community stakeholders. During the next few weeks we will be circulating the draft internally for feedback and suggestions.

Outreach and Education

As you know, we were not able to hold the in-person Earth Day event that we had planned to hold in Post Office Park. So, instead, we produced two videos in honor of the 50th Anniversary of Earth Day. The first included Earth Day messages from Mayor Snyder, Councilor Thibodeau, Portland Society for Architecture, Sebago Clean Waters, ecomaine, and Portland Trails. The

Sustainability Updates

May 2020

second noted the great progress Portland has made on environmental issues since the first Earth Day and noted that addressing climate change is our next big challenge.

Earth Day Messages: <https://youtu.be/MVaUVPyJwq0>

Portland's Environmental Progress: <https://youtu.be/Hkmegxjv2to>

We plan to release a series of videos featuring ways residents and businesses can make Portland more resilient and to help us achieve our climate goals. They'll be organized around the three pillars of sustainability: Equity, Environment, and Economy. The first production focuses on Economy and features Portland Buy Local. It emphasizes that supporting local businesses makes Portland more resilient because, in addition to hiring employees, local businesses purchase goods and services from other local businesses. This keeps money circulating in the community.

Buy Local profile: <https://youtu.be/NXVyCEgKkKs>

Buy Local short: <https://youtu.be/wKOaPkC9ILY>

We have other content recorded as part of the preparation of our Earth Day messages and will produce it as time allows.

We continue regular social media posts. Follow us on Facebook and Instagram at @sustainableportlandme.

We now have a YouTube Channel, City of Portland, ME Sustainability Office. We'll host the videos we produce as well as curated playlists to help educate residents and businesses about sustainable practices. For instance, we have a featured playlist with videos about how to manage your lawn organically.

We invite people to participate in One Climate Future by visiting the webpage at www.oneclimatefuture.org



TO: Chair Thibodeau and Members of the Sustainability and Transportation Committee

FROM: Bruce Hyman, Transportation Program Manager

DATE: May 15, 2020

SUBJECT: Draft Commercial Street Operations and Master Plan Recommendations

CC: Christine Grimando, Planning and Urban Development Director
Troy Moon, Sustainability Coordinator

Introduction:

The City began the PACTS and City-funded Commercial Street Operations and Master Plan in the late summer 2018. The study's goal is to address the transportation infrastructure and operational issues confronting Commercial Street to support a vibrant working waterfront in concert with growing retail, commercial, and residential uses along the corridor. The public outreach and study team identified seven key topic areas that the study addresses:

- Marine Staging, Loading, and Access
- Travel Time & Travel Time Reliability
- Pedestrian Safety, Comfort, and Access
- General Deliveries, Parking and Curbside Management
- Transportation Demand Management
- Bicyclist Comfort & Safety
- Transit Operations.

The study has included significant data collection and analysis during peak summer visitor periods on cruise ship and non-cruise ship days as well as the off-peak season. Data collection included intersection and roadway traffic counts, pedestrian counts at intersections and crosswalks, and observations of the streets function.

Public participation included community-wide forums and stakeholder meetings in October and December 2018 to discuss the corridor's issues and opportunities, and again in August 2019 to review conceptual-level alternatives. Multiple check-ins were also held with the Waterfront Working Group and the Waterfront Alliance, most recently in February 2020. A working group including city staff from Planning, Public Works, Parking, Executive Department and staff from MaineDOT, PACTS, Casco Bay Lines and METRO provided guidance on the conduct of the study and formulation of the recommendations.



The purpose of this meeting is to present an update on the study and draft recommendations to the Sustainability & Transportation Committee for review and input prior to the study being finalized. A presentation on the recommendations will be given at the Committee's May 20th meeting.

Draft Principal Recommendations:

Draft recommendations are presented in the Executive Summary, organized within three themes:

- 1) *Thriving Waterfront* recommendations focus on managing access to and from the piers and wharves; improved use of the center turn lane and curbside for activities such as deliveries, truck staging, and tour buses; and balancing of parking needs and active loading zones.
- 2) *Smart City* recommendations relate to the application of technology to improve street operations and travel time reliability.
- 3) *Great Street* recommendations address infrastructure, safety, streetscape improvements and maintaining and enhancing historic character.

Key recommendations from each focus on policies and regulations for better management of how the public right of way is being used. Their goal is to realize efficiency, accessibility and safety gains during periods of peak traffic and pedestrian conditions via measures that don't require significant infrastructure investment.

Next Steps:

Following input from the Sustainability and Transportation Committee, staff will work with the consultant to finalize the Commercial Street Operations and Master Plan. Work has begun on several of the early action items, such as changes to maximize the efficiency of the West Commercial Street at the Beach Street intersection. Traffic signal equipment enhancements to the signalized intersections along and near Commercial Street are also being designed for better signal coordination and operation. A timeline for full implementation of the plan is not proposed at this time due to the need to monitor and assess the full impacts of Covid-19.

Attachment:

Commercial Street Operations and Master Plan: Draft Executive Summary, May 2020



Commercial Street Operations and Master Plan

Draft Executive Summary

May 2020



Executive Summary

Project Purpose & Study Area

The City of Portland is collaborating with the Maine Department of Transportation (MaineDOT) and the Portland Area Comprehensive Transportation System (PACTS) to develop an Operations and Master Plan (Plan) for Commercial Street, extending from the Beach Street intersection in the west to the India Street intersection in the east. The Plan's purpose is to maintain Commercial Street's critical role of providing functional working waterfront access to and from the adjoining piers, wharves and port passenger and freight facilities, and to balance these waterfront functions with the street's emerging multi-modal needs and its role as a nationally-recognized tourism and retail destination.

Throughout the project, the City and its project team have coordinated with partners and stakeholders to form a Technical Advisory Group that included the Portland Area Comprehensive Transportation System (PACTS), Maine Department of Transportation (MaineDOT), Greater Portland METRO (METRO), Casco Bay Island Transit District (CBITD or Casco Bay Lines), a Technical Advisory Group, the working waterfront group, and members of the public to ensure two-way communication.

Specific focus areas addressed within the Plan include:

- Waterfront freight access and delivery activities
- Pedestrian access and safety
- Managing congestion and vehicular travel time reliability
- Curbside management for parking, deliveries and tours
- Safe and comfortable bicycle facilities

- Transit supportive roadway design
- Emerging technologies, including autonomous vehicles and traffic signal systems
- Lighting.

Existing Conditions & Data Collection

To understand the current state of Commercial Street, the project team collected multi-modal transportation data, and conducted many site visits and field observations. The existing conditions assessment focused on the following key elements of Commercial Street's design and operations:

- Traffic volumes and patterns
- Pedestrian volumes and flows
- Transit service and operations
- Working waterfront activity and operations
- Waterfront passenger activity, including ferries and cruise ships
- Bicycle activity
- Vehicular and pedestrian safety
- Signal timing and intersection operations
- Parking capacity and occupancy
- Delivery operations.

The existing conditions data and observations were presented to key project stakeholders in October of 2018 and to more than 100 members of the public in December of 2018. At these meetings,



*Commercial Street Operations and Master Plan
Draft Executive Summary, May 2020*

attendees offered their vision, what they thought was working well, and what could be improved.

Issues & Opportunities

The analysis results and public feedback were used to develop a list of issues and corresponding opportunities for improvements to Commercial Street, which were grouped into these seven categories:

- Marine Staging, Loading, and Pier/Wharf Access
- Pedestrian Safety, Comfort, and Access
- General Deliveries, Parking, and Curbside Management
- Travel Time/Congestion & Travel Time Reliability
- Transportation Demand Management
- Bicyclist Comfort & Safety
- Transit-compatible Street Operations/Street Design.

Concept Development & Evaluation

Based on the identified Issues and Opportunities, the project team developed a range of potential improvement strategies and measures. These were reviewed, screened, and grouped into three distinct corridor improvement concepts with the following distinct areas of emphasis:

- Concept 1: Reduce travel times and improve travel time reliability
- Concept 2: Improve the working waterfront
- Concept 3: Enhance multimodal accessibility.

Each concept highlighted a set of complementary operational, management and infrastructure strategies tailored to meet that concept's primary goal as reflected by its name. These concepts, along with an evaluation criteria matrix, were presented to the

public in August of 2019. Approximately 75 attendees provided feedback through real-time polling, written comments, and interactive participation to the three concepts and the individual elements included within each.





Recommendations

The feedback provided during the August 2019 public meeting helped the Technical Advisory Group formulate the final recommendations. These recommended actions have been selected to help optimize and balance the often competing transportation functions along Commercial Street and on the waterfront.

Draft recommendations are organized within three themes:

- 1) *Thriving Waterfront* recommendations focus on managing access to and from the piers and wharves; improved use of the center turn lane and curbside for activities such as deliveries, truck staging, and tour buses; and balancing of parking needs and active loading zones.
- 2) *Smart City* recommendations relate to the application of technology to improve street operations and travel time reliability.

- 3) *Great Street* recommendations address infrastructure, safety, streetscape improvements and maintaining and enhancing historic character.

Key recommendations from each theme focus on policies and regulations for better management of how the public right of way is being used. Their goal is to realize efficiency, accessibility and safety gains during periods of peak traffic and pedestrian conditions via measures that don't require significant infrastructure investment.



THRIVING WATERFRONT

Actions to maintain a thriving working waterfront and improve economic activity.

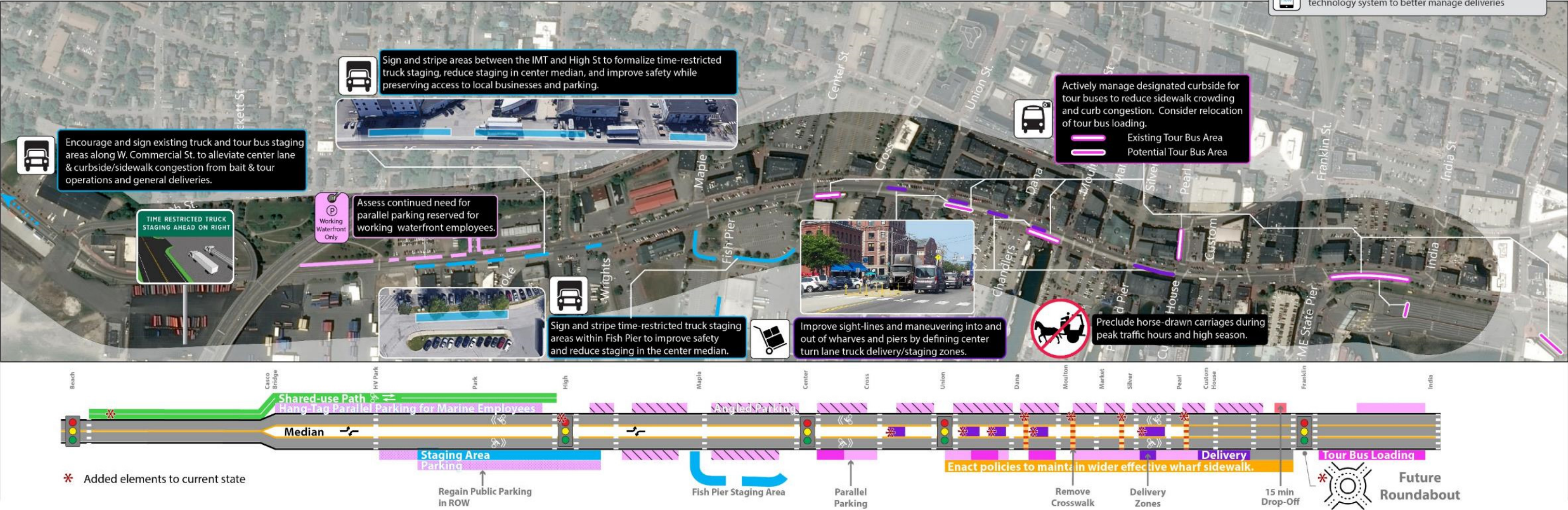
GENERAL DELIVERIES

Add center lane pavement markings to designate allowed delivery zones (20' offset from crosswalks)

Survey businesses to identify potential time-restricted delivery windows for businesses

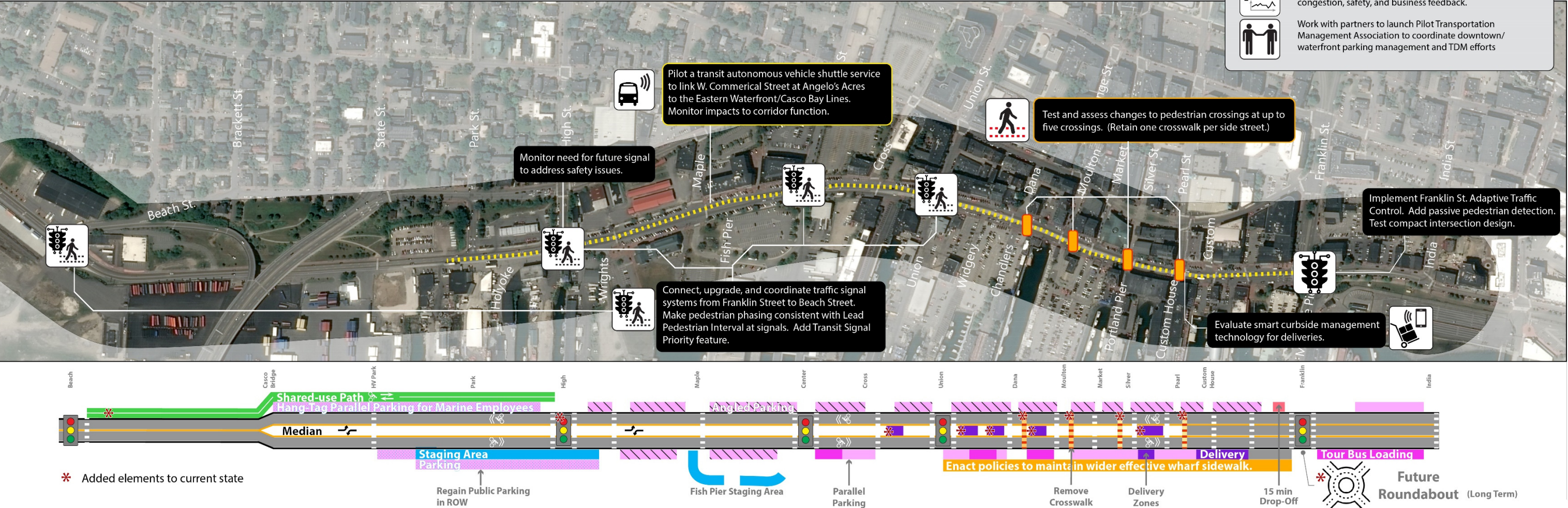
Consult with distributors and delivery providers to track volumes and locations over the course of a day to refine potential time-restrictions

Assess opportunities to deploy curbside reservation/technology system to better manage deliveries





SMART CITY Applications of technology and management to improve operations and travel time reliability.





GREAT STREET

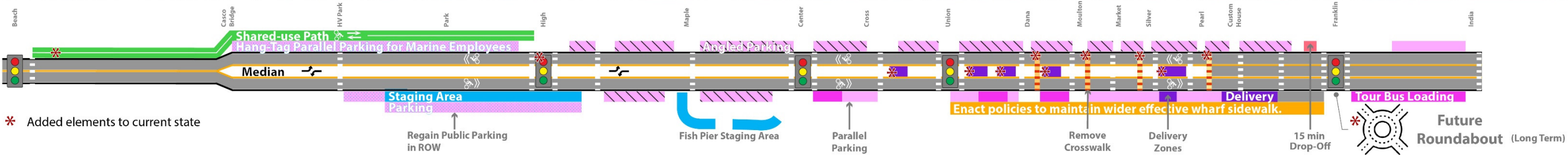
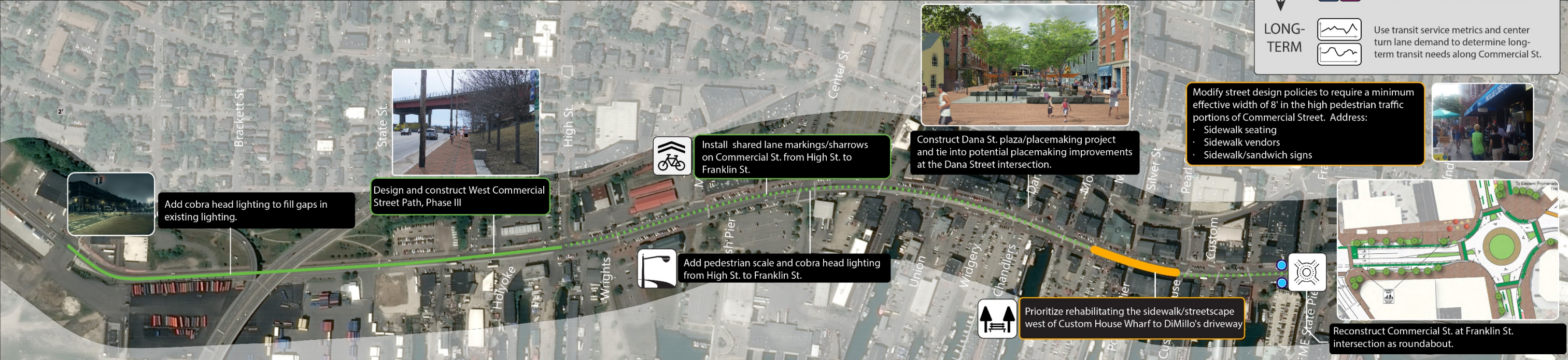
Recommendations to improve infrastructure, safety and streetscape and reinforce historic character.

BICYCLIST COMFORT, SAFETY & ACCESS

- Add bike racks
- As street design projects move forward, monitor cyclist usage and crash events, consider separated or protected facilities as warranted

TRANSIT SERVICE

- SHORT-TERM**
- Assess near-term transit needs in concert with METRO Reboot for Routes 1 & 8. Coordinate with AV Shuttle pilot.
 - Assist METRO with potential bus stop locations to serve the Eastern Waterfront.
 - Implement Reboot service changes for Routes 1 & 8 and reinforce connections
- LONG-TERM**
- Use transit service metrics and center turn lane demand to determine long-term transit needs along Commercial St.



--Draft--
AMENDMENT TO PORTLAND CITY CODE
HERITAGE TREE ORDINANCE

WHEREAS, the City of Portland wishes to protect Heritage Trees from damage or removal; and

WHEREAS, the City of Portland recognizes that Heritage Trees provide extensive ecosystem services such as filtering stormwater, sequestering carbon, and mitigating urban heat; and

WHEREAS, the City of Portland also recognizes that Heritage Trees enhance the neighborhoods in which they are located by adding beauty, softening the urban environment, and offering shade from summer sunlight; and

WHEREAS, the City of Portland has long been recognized as “the Forest City” because of its commitment to its Heritage trees; and

WHEREAS, development threatens Heritage Trees with harm or removal; and

WHEREAS, many citizens desire that Heritage Trees be protected from unnecessary cutting; and

WHEREAS, a growing number of communities and municipalities including the City of Portland embrace the need to protect Heritage Trees; and

NOW THEREFORE BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PORTLAND *that the Portland City Code is hereby amended by adding ..., which said Sections read as follows:*

Chapter __-1. – Heritage Trees

Section __-1. Title.

This chapter shall be known as the City of Portland Heritage Tree Protection Ordinance (hereinafter, the “Ordinance”).

Section __-2. Intent and purpose.

The preservation of the tree canopy and the planting of replacement trees is intended to enhance the quality of life and the environment of the city; to reduce energy consumption; to protect air

quality; to provide protection from glare and heat; to baffle noise; to reduce topsoil erosion and stormwater runoff; to preserve and enhance habitat for wildlife; to protect and increase property values; to combat climate change through carbon sequestration; to provide natural privacy for neighbors; to enhance the overall appearance of the City; and to acknowledge the intrinsic value of the mature trees within our community.

The purpose of this Ordinance is to discourage the removal or extensive pruning of Heritage Trees located in historic districts of the City of Portland on private property and to replace the valuable ecological services such trees provide should they be removed.

Section __-3. Definitions.

Caliper: A measurement of the tree trunk diameter used when purchasing tree plantings measured at 12” above the ground.

City Tree: A tree located on property owned by the City of Portland, including Public Shade Trees, trees in City parks, trees on the grounds of City buildings, and trees in the public right of way.

DBH (Diameter at Breast Height): The diameter of a tree trunk measured in inches at a height of four and a half (4.5) feet above the ground. For multiple trunk trees, DBH is the aggregate diameter of the trunks.

Heritage Tree: A Heritage Tree is a tree located on privately owned property, located in a designated historic district and that meets at least one of the following criteria:

1. Any tree that is on the Register of Big Trees promulgated by the Maine Department of Agriculture, Conservation & Forestry (the “Big Tree List”);
2. Certain trees 24” in diameter or greater: Oak species: White Oak, Red Oak, Pin Oak, Swamp White Oak, Burr Oak; Sugar Maple, Red Maple, Shagbark Hickory, Ginkgo, Tulip Poplar, Cucumber Magnolia, Elm, Birch species, Hemlock, Pine Spruce, Horse Chestnut, Walnut, Catalpa, Black Cherry, Linden, Sweetgum, European Beech, Honey Locust, and Sycamore;
3. Ornamental trees 12” in diameter or greater: Dogwood, Magnolia, Dawn Redwood, Japanese Maple, Hawthorn, Apple, Chameacyparis, Cherry, Hornbeam, Amelanchier, Sassafras, and Mulberry;
4. Stands of native trees that are rare or threatened including: Shagbark Hickory, Pitch Pine, American Mountain Ash, Red Spruce, and Atlantic White Cedar.

Qualified Tree Professional: A Qualified Tree Professional is an individual with relevant education and training in arboriculture or urban forestry who has at least one of the following credentials:

- International Society of Arboriculture (ISA) Certified Arborist
- Tree Risk Assessor Qualification (TRAW)
- American Society of Consulting Arborists (ASCA) registered Consulting Arborist
- Society of American Foresters (SAF) Certified Forester for Forest Management

Plans

Removal: The intentional cutting down of any tree, including all other acts which cause actual or effective removal through damaging, poisoning, or other direct or indirect actions that result in the death of the tree. This includes, but is not limited to, excessive pruning and tree topping.

Replacement Caliper: The replacement caliper for Heritage trees shall be at least equal to the DBH of the tree removed.

Tree Topping: Topping is defined as the severe cutting back of limbs to stubs larger than three inches in diameter within the tree's crown to such a degree so as to remove the normal canopy and disfigure the tree.

Tree Trust: Fund established by the City to plant trees and to maintain street trees and trees in City owned open space, rights of way, or parks.

Section __-4. Applicability.

The terms and provisions of this ordinance shall apply to all Private Trees within the City of Portland that are located on private property which meet the definition of a Heritage Tree.

Section __-5: Permit Required for Removal of healthy Heritage Trees on Private Property:

No person, directly or indirectly, shall remove any Heritage Tree on any private property within a Historic District without first obtaining a tree removal permit as provided in this chapter, unless specifically exempted by this ordinance.

Section __-6. Tree Removal Permit Application Form.

- a. The Parks, Recreation, and Facilities Department shall establish and maintain a tree removal permit application to allow property owners to request City review of a proposed removal of Heritage Tree for compliance with the Heritage Tree Ordinance. The Heritage Tree Removal Permit application form shall include at a minimum the following: A site plan, drawing, or screen shot showing the approximate location of Heritage Trees, their size (DBH) and their species, along with the location of structures, driveways, access ways, and easements.
- b. If replacement trees are to be planted, the plan shall indicate the planned location, species, and size of any replacement trees to be planted. In order to qualify as replacements, trees to species and planting standards as defined by the City Arborist. Trees planted in the adjacent right-of-way or otherwise located on public property shall not be considered suitable for consideration as replacement trees.

Section __-7: Conditions for Granting a Heritage Tree Removal Permit

- c. Removal of Significant Trees: If any Heritage Trees are to be removed, the plan must show planting of new trees equal to the total Replacement Caliper of those trees. Replacement trees shall be planted on the property where the Heritage Tree is removed unless another location is identified and the City Arborist determines in his or her sole

discretion that off-site replacement will satisfy the purposes of this Ordinance.

- d. Payment instead of Replacement: Payment to the Tree Trust may be made in lieu of planting some or all of the replacement trees, according to a cost schedule established by the City Arborist. Such fees shall be based on the actual costs associated with purchasing, planting, and maintaining the replacement trees of comparable size and value. Payment must be made prior to issuance of the permit.
- e. Request for Waiver: The application for a Heritage Tree Removal Permit shall allow the applicant to request a waiver of the requirement for replanting or payment.
- f. Hearing of Request for Waiver: The City Arborist, or his or her designee, shall hear requests for such waivers within ____ days of the date the application was received. Examples of reasons supporting a waiver include but are not limited to: Financial hardship associated with the care and upkeep of the trees; unreasonably high requirements for replacement or repayment, ongoing or reasonably foreseen damage or risk from the trees, and desire to create a benefit to the public. The City Arborist shall consider such recommendation in considering whether or not to grant the waiver.

Section __-8. Standards for Replacement Trees

- a. Replacement trees must be of the same or similar species and size as described in the application for the Heritage Tree Removal Permit, and must be planted according to standards established by the City Arborist.
- b. In the event that trees of the size and species that were described in the application for the Tree Permit cannot be obtained at the time of planting, multiple smaller replacement trees may be planted with the authorization of the City Arborist.
- c. The City Arborist shall determine the number of trees required to be planted to mitigate the loss of the Heritage Tree using the replacement caliper as it relates to the DBH of the tree that is to be removed.

Section __-9 Exceptions to the Heritage Tree Removal Permit Requirement:

- a. Emergencies: If any tree shall be determined by the City Arborist to be in a hazardous condition so as to immediately endanger the public health, safety, or welfare or cause an immediate disruption of public services and require immediate Removal without delay, verbal authorization may be given by the City Arborist to remove such tree, and the tree may be removed without obtaining a written permit as otherwise required by this ordinance. The City Arborist shall record in writing each such verbal authorization and maintain them in accordance with applicable law.
- b. Waiver: The requirements of this article may be waived by the City Arborist during the period of an emergency such as a hurricane, tornado, windstorm, flood, or similar threat to life and property.

Section __-10 HeritageTree Removal Permit Application Procedure and Appeals.

Applicants requesting a Heritage Tree Removal Permit must submit a completed permit application to the City Arborist on a form provided by the City.

- a) The City Arborist or designee shall review the application within 21 calendar days and either approve, approve with conditions or modifications, deny the application or request additional information. The City Arborist will also note any requirements for replacement trees as indicated in Section __-8 above or calculate the cost of replacement trees, depending on the preference of the applicant. The City Arborist's decisions shall be in writing along with the process for calculating the number of replacement trees required or the amount of the financial contribution required to the Tree Trust.
- b) An applicant for a Heritage Tree Removal Permit may appeal the decision of the City Arborist to the Director of Parks, Recreation, and Facilities whose decision will be final.
- c) Time Limit. If granted a permit, the applicant shall complete the removal and necessary tree replacement within one (1) year from the date the permit is issued, or prior to transfer of property ownership, whichever comes first.
- d) If any trees required by the permit issued by the City Arborist remain unplanted after the one (1) year period the applicant shall instead make a contribution to the Tree Trust as outlined in Section __-8 above.
- e) If a replacement tree dies within 18 months from the date of planting, it must be replaced. The person planting the tree shall provide documentation as to the date of the planting and file the same with the City Arborist within 15 days of the planting of said replacement tree

Sec. __-11. Enforcement:

- a. If a Heritage Tree is removed without a Heritage Tree Removal Permit as required herein, the property owner must apply for a Tree Permit within 30 days of the Removal. Each business day thereafter, until an application is filed, shall constitute a separate violation of this ordinance and shall be subject to the penalties outlined in Section 1-15 of the Portland City Code.
- b. Stop work order: Upon notice that trees are being removed without a Heritage Tree Removal Permit, such work shall be immediately stopped by the Director of Parks, Recreation, and Facilities or designee. The stop work order shall be in writing and shall be mailed to the owner of record of the property and posted at the front of the property in a conspicuous location, and if possible, given to the owner of the lot involved, or to the owner's agent, or to the person doing the work, and shall state the conditions under which work will be permitted to resume.
- c. Injunctive relief: Whenever there exists reasonable cause to believe that a person is violating any applicable provision of this article, the city may institute a civil action for an injunction in a court of competent jurisdiction ordering the defendant to correct the unlawful condition or to cease the unlawful use of the property.

Sec. __-12.Conflicts with Other Ordinances.

Whenever a provision of this ordinance conflicts with or is inconsistent with another provision of this ordinance or of any other ordinance, regulation or statute, the more restrictive chapter, article or ordinance of the Portland City Code shall control.

Sec. __-13. Effective date. This ordinance shall become effective ninety (90) days following passage by the City Council. During the time between passage and the effective date the City Arborist shall post notice on the City Web Page and mail a notice about the ordinance to all licensed arborists in Cumberland County.

TREE TRUST FUND

(The draft Heritage Tree Protection Ordinance specifies the creation of a fund to accept financial contributions from individuals who receive a permit to remove a heritage tree and choose to make a payment in lieu of replacing trees.)

Sec. X. Tree Trust.

(a) *Purpose.* The purpose of enacting this section is: That a tree trust fund be established to facilitate compliance with tree replacement requirements set forth in *Chapter X* of this Code

(b) *Definitions.*

Heritage Tree: A Heritage Tree is a tree located on privately owned property, located in a designated historic district and that meets at least one of the following criteria:

1. Any tree that is on the State of Maine "Big Tree List";
2. Certain trees 24" in diameter or greater: Oak species: White Oak, Red Oak, Pin Oak, Swamp White Oak, Burr Oak; Sugar Maple, Red Maple, Shagbark Hickory, Ginkgo, Tulip Poplar, Cucumber Magnolia, Elm, Birch species, Hemlock, Pine Spruce, Horse Chestnut, Walnut, Catalpa, Black Cherry, Linden, Sweetgum, European Beech, Honey Locust, and Sycamore;
3. Ornamental trees 12" in diameter or greater: Dogwood, Magnolia, Dawn Redwood, Japanese Maple, Hawthorn, Apple, Chameacyparis, Cherry, Hornbeam, Amelanchier, Sassafras, and Mulberry;
4. Stands of native trees that are rare or threatened including: Shagbark Hickory, Pitch Pine, American Mountain Ash, Red Spruce, and Atlantic White Cedar.

(c) *Establishment of the tree trust fund.* The city council hereby establishes a special revenue account under the name "City of Portland Tree Trust Fund." Deposits into the fund shall include:

1. Contributions made by anyone removing heritage trees and choosing to make a contribution in lieu of planting trees as specified in **Chapter X** of this code;
2. Funds appropriated to be deposited into the fund by vote of the city council;
3. Voluntary contributions of money or other liquid assets to the fund;
4. Any federal, state or private grant or loan funds provided for tree trust fund purposes; and/or
5. Interest from fund deposits and investments.

(d) *Management of the trust fund.* The city manager, or his or her designee, shall serve as the manager of the tree trust fund. The responsibilities of the manager, subject to the orders of the city council, shall include:

1. Maintaining the financial and other records of the tree trust fund;
2. Disbursing and collecting tree trust fund monies in accordance with the tree trust fund annual plan; and
3. Monitoring the use of monies expended and assuring compliance with the purposes of the fund and the conditions under which any portions of the fund were granted or loaned.

(e) *Tree trust fund annual plan.* Each fiscal year, the city council shall adopt a tree trust fund annual plan. The city manager shall submit to the city council a recommended tree trust fund annual plan, utilizing the revenues of the tree trust fund as well as any other funds the manager may propose as appropriate. The Sustainability and Transportation Committee of the city council, or such other committee as the council shall designate, shall conduct public hearings on the recommended plan and refer the matter to the council for action.

The tree trust fund annual plan shall include:

1. A description of all tree planting programs to be funded in part or in full by the tree trust fund;

2. Identification of the locations trees were planted in the prior year;
3. Identification of locations that would most greatly benefit from tree planting to reduce the amount of impervious surface, reduce urban heat islands, and manage stormwater;
4. The amount of funds used for tree planting in the prior year.

(f) *Distribution and use of the tree trust fund's assets.*

1. All distribution of principal, interest or other assets of the tree trust fund shall be made in furtherance of the public purposes set out in section X (Heritage Tree Ordinance)
2. Funds shall not be used for city administrative expenses



CITY OF PORTLAND

Sustainability Office

Troy Moon

Sustainability Director

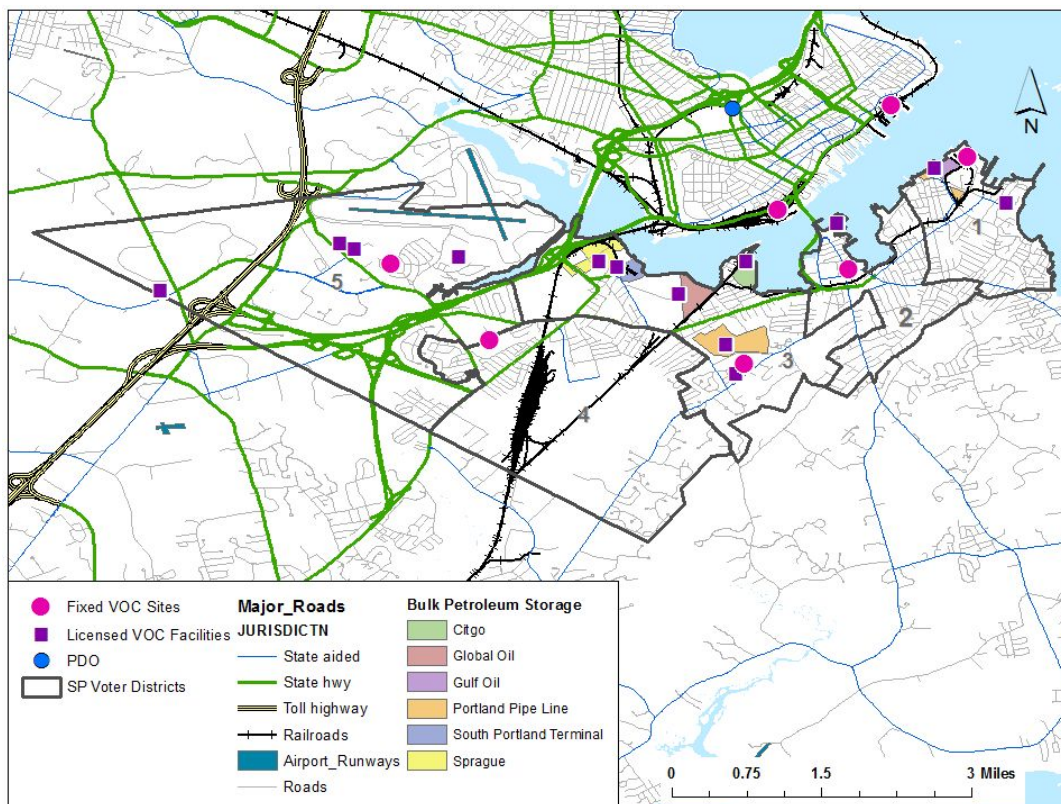
To: Councilor Thibodeau and member of the Sustainability and Transportation Committee

From: Troy Moon, Sustainability Director

Date: May 15, 2022

RE: Update on Air Quality Sampling

As requested, we have prepared an update about the Maine DEP's program to monitor air quality at several locations around Portland Harbor. The original program began in South Portland but expanded to two locations in Portland: Ocean Gateway and West Commercial Street. The DEP has maintained a monitoring station in Deering Oaks for many years. It's data serves as a baseline against which to compare readings from the other locations.



We have attached a report created by Maine Centers for Disease Control that presents their analysis of data collected from November, 2019 - January, 2020. They note that, to date, no measurements have exceeded acute minimal risk levels. As requested by Councilor Thibodeau, we have included the most recent data. The Maine CDC has not yet had an opportunity to evaluate this data.

We are also including information about recent complaints about petroleum odor logged into the See Click Fix platform by residents.

Representatives from the Maine CDC were unable to join the Committee meeting this month but have offered to attend in June so they may provide additional information and answer questions from the Committee.

South Portland / Portland 24 Hour Volatile Organic Compounds Air Monitoring Results Analysis and Summary Report

Analysis and Summary for Sampling Period
November 2019 – January 2020

March 20, 2020

Prepared by the Maine Center for Disease
Control and Prevention

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Executive summary

In 2019 the Maine Department of Environmental Protection (DEP) installed five 24-hour air sample monitoring stations in South Portland and two stations in Portland and began a yearlong air monitoring program for volatile organic compounds (VOCs). The DEP is collecting 24-hour air samples every six days at each monitoring station and providing the VOC measurement data to the Maine Center for Disease Control and Prevention (Maine CDC) on a monthly basis. This report summarizes the Maine CDC analysis of VOC levels measured in 24-hour air samples from the monitoring stations in South Portland and Portland. The analysis is focused on comparing the 24-hour sample results for individual VOCs to short-term, acute, and long-term, chronic, health-based guidelines. For short-term health-based guideline comparisons, individual VOC levels from each 24-hour air sample at each station are compared to acute Minimal Risk Levels (acute MRLs) maintained by the federal Agency for Toxic Substances and Disease Registry. For long-term health-based guideline comparisons, the time-weighted cumulative average of all 24-hour samples for individual VOCs at each station is calculated and compared to the Maine Ambient Air Guidelines (AAG) which are derived to be protective of human population (including sensitive subpopulations) exposures over a lifetime.

Regarding short-term exposure levels, to date no 24-hour sample result at any sample location for the measured VOCs exceeded an acute MRL. For long-term exposures, the time-weighted cumulative average for most VOCs is well below the corresponding AAG. Currently, the cumulative averages for two chemicals exceed their corresponding AAG - acrolein at all locations, and naphthalene at some locations. The cumulative average for acrolein at all sample stations is approximately 20 times higher than the AAG. However, cumulative average acrolein levels at the South Portland/Portland stations are comparable to averages from other air monitoring stations across the state. At two sample stations in South Portland and two stations in Portland the cumulative average for naphthalene is currently above the long-term, health-based AAG, but no more than 2.5 times higher. Measured levels of naphthalene, benzene, and 1,3-butadiene are all showing pronounced seasonal trends, with higher levels being observed in winter months. At least a year of data will be needed to fully capture seasonal variations and assess whether these time-weighted cumulative averages are reasonably reflective of long-term exposures.

Background

In response to concerns regarding emissions of VOCs from petroleum and asphalt tanks in South Portland, the DEP set-up multiple fixed-location 24-hour air sampling stations in South Portland and Portland to monitor air quality. Five monitoring stations were installed in the South Portland area and two monitoring stations, in addition to the station present at Deering Oaks, in Portland¹. The DEP installed the stations from June through November 2019 with each station, once operational, collecting a 24-hour air sample every six days. The DEP will run the air sample stations through November 2020, completing a year of monitoring with all stations operational. The air samples are analyzed for a suite of VOCs at the DEP's Air Quality laboratory. The DEP provides the VOC measurement data from the eight stations once a month to Maine CDC. This report describes how the Maine CDC intends to analyze the 24-hour VOC air sampling data it receives and prepare summary figures for the 24-hour

¹ South Portland and Portland 24-hour sample station locations: <https://www.maine.gov/dep/air/monitoring/spo-voc-monitor.html>

VOC data to facilitate inspection of measured levels relative to both short-term and long-term health guidelines. This document provides a set of figures that represent a compilation of data collected through January 2020. These analyses and figures will be updated approximately every three months (i.e. quarterly).

Quarterly analysis plan for 24-hour VOC sample results

The objective of the analysis plan for 24-hour VOC sample results is to compare the measured VOC levels to appropriate health-based guideline values to assess potential health risks. The analysis plan evaluates health risks for both short-term, acute, exposures and long-term, chronic, exposures. Short-term exposure hazards are assessed by comparing the individual 24-hour sample results to acute Minimum Risk Levels (MRLs) developed by the U.S. Agency for Toxic Substances and Disease Registry (ATSDR). ATSDR acute MRLs are developed for an exposure period of 1 to 14 days and are estimates of the amount of a chemical a person can be exposed to each day without appreciable risk of non-cancer health effects². This analysis will aid in identifying any potential short-term elevations in VOC levels that may warrant further investigation.

Long-term exposure hazard is assessed by first computing the time-weighted cumulative average for all 24-hour samples taken to date for each individual chemical at each sample location. The time-weighted cumulative averages by chemical and location are then compared to the Maine Ambient Air Guidelines (AAGs). AAGs are Maine-specific air level guidelines developed for lifetime exposures where there is a minimal risk of an adverse health effect even for sensitive individuals. AAGs are developed using U.S. Environmental Protection Agency (EPA) regional screening level (RSL) inhalation toxicity values³. For chemicals with the ability to cause cancer, the AAGs are set at an incremental lifetime cancer risk of 1-in-100,000, consistent with State policy. As AAGs are based on lifetime exposure, the longer the time period represented by the time-weighted cumulative average, the more representative it becomes of lifetime exposure. This time-weighted cumulative average analysis will aid in determining whether any VOC concentrations over a longer monitoring period exceed health-based AAGs.

I. Quarterly analysis and summary figures for short-term exposure concerns

For each chemical with a chemical-specific acute MRL, the individual VOC concentrations for each sample location and sampling day will be compared to the acute MRL. Only 15 of the 47 chemicals measured in the 24-hour air samples have corresponding acute MRLs. In the case of the VOC naphthalene, which is a chemical of interest but does not have an ATSDR acute MRL, the Maine Intermediate Intervention Action Level (IIAL) will be used to assess acute health concerns. Maine CDC derived an IIAL for naphthalene to be used in assessing exposures in indoor building air (e.g., schools, homes, businesses) where there has been a fuel oil spill. The IIAL was derived using the same risk assessment methodology as an ATSDR MRL. Specifically, the IIAL for naphthalene is based on a 4-hour exposure to rodents where there was no apparent effect even when examined using sensitive measures of damage to cells of the nasal and respiratory track. The rodent exposures were adjusted

² ATSDR MRLs - <https://www.atsdr.cdc.gov/minimalrisklevels/index.html>

³ EPA RSLs - <https://www.epa.gov/risk/regional-screening-levels-rsls>

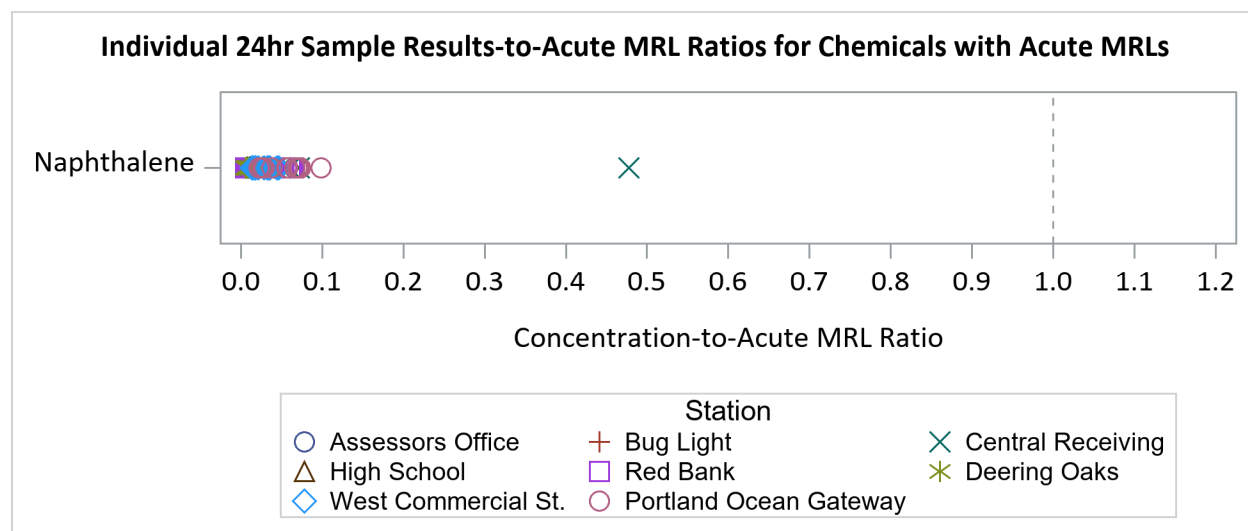
downward for an animal-to-human extrapolation and for potential sensitive human populations following standard risk assessment practices.

To summarize the comparison of 24-hour air sample results to acute MRLs, Maine CDC will calculate the ratio of the measured VOC concentration to the acute MRL and display the ratios for each chemical by station (Example Figure A)⁴. A ratio greater than 1 indicates that the VOC concentration for a 24-hour sample exceeded the chemical-specific acute MRL, or in the case of naphthalene the IIAL. A ratio lower than 1 indicates the VOC concentration did not exceed the chemical-specific acute MRL.

All chemicals with acute MRLs will be evaluated monthly as new data is received to determine if any 24-hour results are above these short-term health guidelines. Summary Figure 1 at the end of this report presents results for all of the chemicals with an acute MRL in one figure.

For the remaining chemicals with no acute MRL for comparison, the individual 24-hour sample results by sample date and sample location will be plotted as bar charts and inspected to monitor for any unusual trends or spikes in concentrations. All 24-hour sample results are available on the DEP's website⁵.

Example Figure A. Individual 24-hour sample result-to-acute MRL ratio by station for naphthalene.



In Example Figure A different symbols are used for each sample location to display the ratio for naphthalene. For each sample location, there will be multiple 24-hour air sample results. This example figure shows that all the 24-hour sample results for naphthalene for all sample locations had measured air levels below the IIAL. The highest naphthalene level measured (1.2 ppb-v) was at the Central Receiving station but this level was still about 2-fold lower than the IIAL (2.5 ppb-v) with a ratio of 0.48 (i.e., $1.2 / 2.5 = 0.48$).

II. Quarterly analysis and summary figures for long-term exposure concerns

⁴ The ratio between the measured concentration and the toxicity value, in this case the acute MRL, is often referred to as a hazard quotient when assessing noncarcinogenic health effects.

⁵ DEP South Portland/Portland air monitoring data - <https://www.maine.gov/dep/air/monitoring/spo-sampling-results.html>

The time-weighted cumulative averages for all 24-hour samples taken to date for each individual chemical at each sample location will be calculated and compared to the Maine AAGs. Three types of figures will be generated to display results for the cumulative average AAG comparisons:

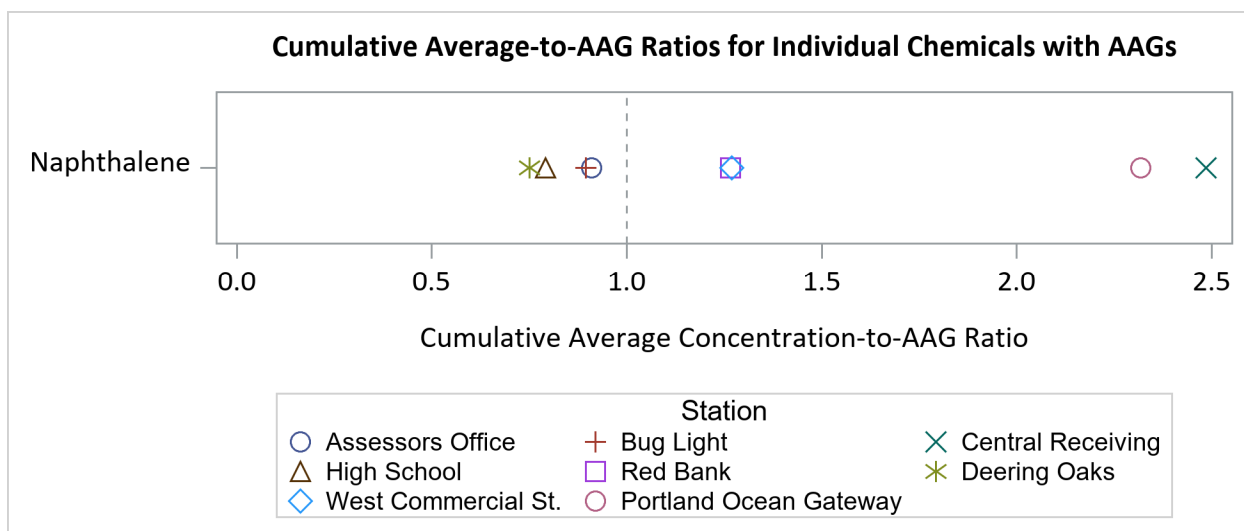
- A. cumulative average to AAG ratio figure
- B. cumulative average uncertainty figures and
- C. cumulative average time trends figures.

All chemicals with AAGs will be evaluated quarterly to determine if the cumulative averages of any measured VOC either approaches or exceeds an AAG and to identify seasonal trends. For chemicals with no AAG for comparison, the cumulative averages will be monitored to track any pronounced trends.

A. Cumulative average to AAG ratio figures

The cumulative average to AAG ratio figure will display the calculated ratio of the time-weighted cumulative average concentration to the AAG by station and chemical (Example Figure B). As with the ratio figure described above for short-term exposures, a ratio above the value of 1 indicates a cumulative average is higher than the AAG, whereas a ratio less than 1 indicates it is below the AAG. These figures allow for quick inspection of whether the measured VOCs are trending above or below their associated AAG. There is a total of 47 VOCs in the data received from DEP, 33 of which have an AAG for comparison. The AAG comparison results for 33 chemicals can be summarized in one ratio figure. However, the cumulative average-to-AAG ratio for acrolein will be displayed as a separate ratio figure as the cumulative average for acrolein at all sample locations greatly exceeds the AAG making it difficult to inspect the results for other VOCs. For acrolein, this is also the case at all other 24-hour air monitoring stations across the state.

Example Figure B. 24-hour cumulative average-to-AAG ratio by station for naphthalene.

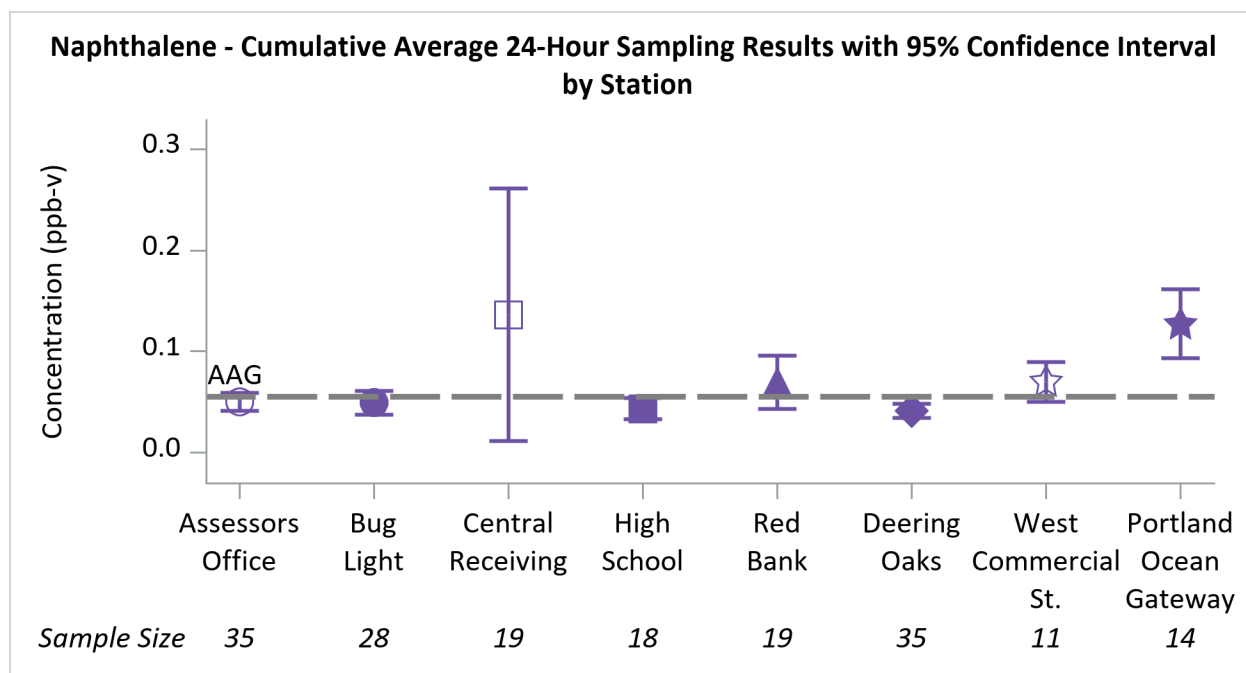


In Example Figure B different symbols are used for each sample location to display the ratio for naphthalene. For each sample location, there will be one cumulative average-to-AAG ratio for each chemical. This example figure shows the cumulative average-to-AAG ratio for naphthalene. For four stations with ratios above 1, the cumulative average naphthalene concentration is above the the AAG. For the four stations with ratios below 1, the naphthalene cumulative averages are below the AAG.

B. Cumulative average uncertainty figures

Cumulative average uncertainty figures will display the 24-hour cumulative averages with 95% confidence limits for the estimated average for each individual chemical by location with the chemical-specific AAG for comparison (dashed horizontal line). The wider the confidence limits the less confidence in the estimated time-weighted average. For the cumulative average uncertainty figures (as illustrated in Example Figure C), it takes 33 figures to present all the comparisons for all the individual VOCs with AAGs. For this reason, only those chemicals with cumulative averages that either exceed an AAG or are within a factor of three of an AAG (i.e., no less than one-third of an AAG) will be selected for display as cumulative average figures. Thus far the only chemicals that meet either of these criteria are acrolein with averages at all stations above the AAG; naphthalene with averages above the AAG at four of eight stations; and benzene, 1,3-butadiene, and carbon tetrachloride with averages that are at least one-third of the AAG.

Example Figure C. 24-hour cumulative averages with 95% confidence limits on the estimated average for naphthalene.



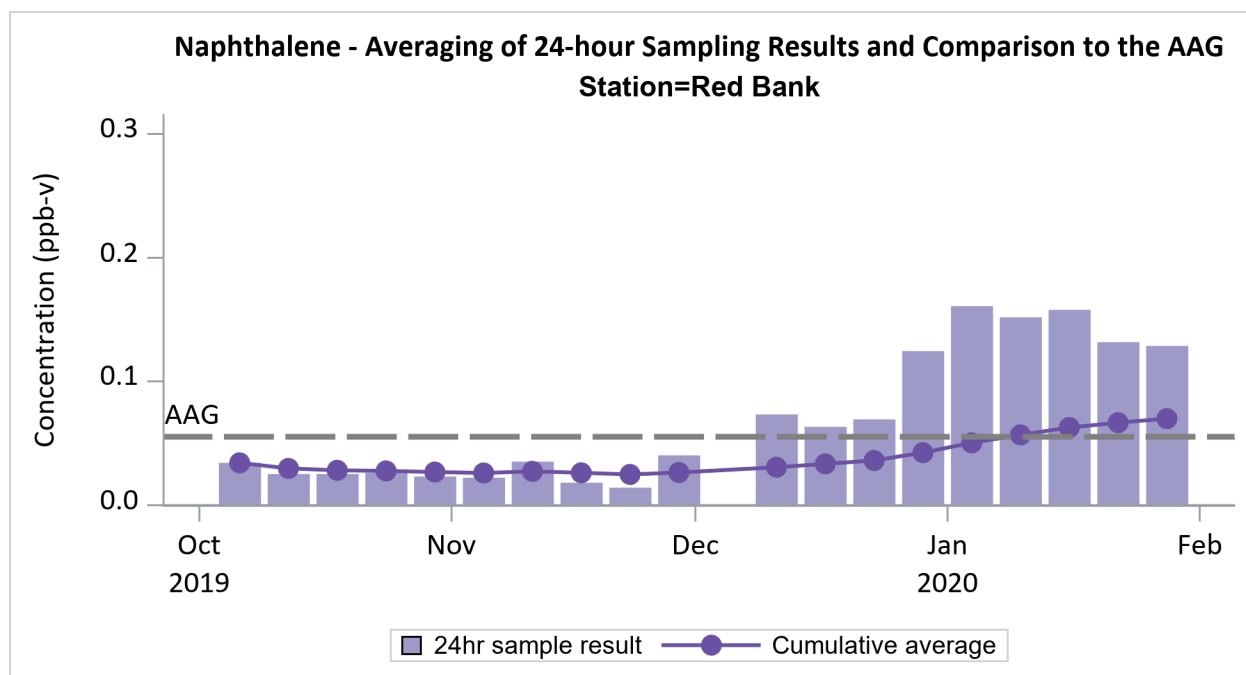
Example Figure C shows the cumulative average and 95% confidence interval for naphthalene by sample location. The length of the confidence limits reflects both the amount of variation between individual 24-hour sample results and the number of sample results. Some sample locations have more 24-hour sample results than others as the stations were brought online from June through November 2019. The more sampling results and the less variation among individual results, the shorter the confidence limits and the lower the uncertainty about the estimated cumulative average.

C. Cumulative average time trends figures

These figures will display the individual 24-hour sampling results chronologically by sample date with separate figures for each chemical as a bar chart. The bar chart will be overlaid with a line chart showing how the cumulative average is changing as additional 24-hour sampling results are obtained and will include a reference line for the AAG (Example Figure D). These figures are useful for tracking any trends in the cumulative average (i.e., is it increasing or decreasing as more data are obtained) as well as trends in individual 24-hour results (e.g., is there evidence of seasonal patterns). The combination of the bar chart with individual 24-hour results and the line chart showing the cumulative average will also show the impact of any unusually high results on the cumulative average.

It takes more than 264 figures to display the results for all 33 VOCs measured that have an AAG for comparison with the eight different sampling locations. Due to the larger number of figures, cumulative average trend figures will only be provided in the quarterly analysis and summary updates for those chemicals exhibiting pronounced temporal changes in measured levels relative to AAGs. For now, this is limited to figures for benzene, naphthalene, and 1,3-butadiene.

Example Figure D. 24-hour individual sample bar charts with line chart displaying the trends in the time-weighted cumulative average for naphthalene.



Example Figure D displays both the individual 24-hour sample results and the cumulative average for naphthalene measurements from the South Portland Red Bank station. The height of the individual bars reflects the measured 24-hour average air concentration, collected once every six days, for a specific VOC by sample date. The line with circle markers shows the time-weighted cumulative average as of that sampling date. The dashed horizontal reference line shows the AAG. This example figure shows a pronounced increase in air levels of naphthalene during winter months and the impact of these increases on the cumulative average.

Additional analyses

Maine CDC is evaluating other analyses including, but not limited to analyses to estimate the potential cumulative impact of concurrent exposure to multiple VOCs. There are standard risk assessment methods for evaluating the cumulative hazard of concurrent exposure to multiple chemicals. These methods are relatively straight forward for cancer-causing chemicals. A cumulative cancer risk analysis involves summing the cancer risk estimates for individual chemicals under the assumption that the chemicals act in an independent and additive manner. The summing methods can be more involved with chemicals that cause health effects other than cancer (noncarcinogens), such as evaluating the cumulative impact only among chemicals that share a common target system for a health effect (e.g., reproductive, respiratory, neurological system) or a common target organ (e.g., liver, lung, blood). These additional analyses are likely only to be performed after a year of monitoring has been completed.

Maine CDC is also planning to perform analyses on the spatial pattern of emergency department (ED) visits for asthma to look for evidence of clustering of cases relative to potential exposure to VOCs. This

analysis will initially focus on ED visits that occurred between 2018 and 2019, as these are the only years for which address-level data are available to support such analyses. To access these data, Maine CDC will need to make a special request to the Maine Health Data Organization (MHDO) for access, first for just address data without any linked health information so we can perform a geocoding service necessary to enable these data to be mapped. Once this geocoding work is completed and the geocoded address data are returned to MHDO, Maine CDC will make a follow-up request to MHDO for the geocoded data linked to health outcome data, such as ED visits for asthma, that will be used to evaluate clustering of cases. Maine CDC is working to establish an agreement with MHDO to access address data for geocoding. However, the current COVID-19 response will impact progress on this work.

In the pages that follow, a set of figures are presented that summarize results to date. The current plan is to update this set of figures quarterly.

Summary Figures

- I.** Summary figure for short-term exposures -
Acute MRL ratio figure

Acute MRL ratio figure

Figure 1. Individual 24-hour sample results-to-acute MRL ratios for chemicals with acute MRLs

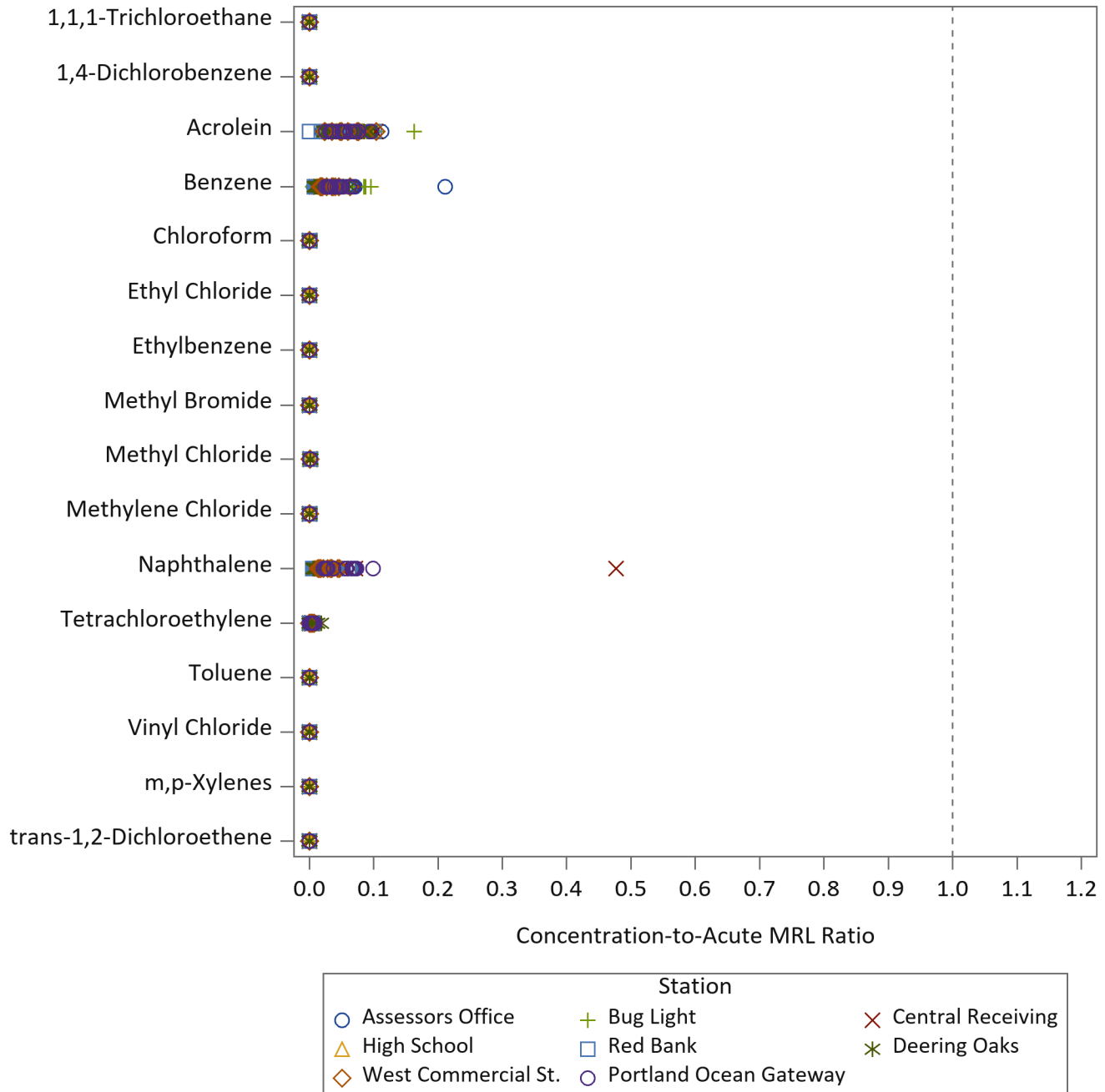


Figure 1 shows the ratio of individual 24-hour sample results collected to date at each sampling station to chemical-specific Agency for Toxic Substances and Disease Registry (ATSDR) acute Minimum Risk Levels (acute MRLs). Acute MRLs are developed for an exposure period of 1 to 14 days and are estimates of the amount of a chemical a person can be exposed to each day without a detectable risk to health. For naphthalene, the Maine Intermediate Intervention Action Level (IIAL) is used for comparison to acute exposure levels as there is no acute MRL for naphthalene currently available from ATSDR. Ratios greater than 1, the dashed grey reference line, indicate that an individual 24-hour sample result exceeded the chemical-specific acute MRL. To date, no VOC levels exceed an acute MRL. Sampling data obtained from Maine DEP current through January 2020.

Summary Figures

- II.** Summary figures for long-term exposures -
 - A. Cumulative average to AAG ratio figures
 - B. Cumulative average uncertainty figures
 - C. Cumulative average time trends figures

A. Cumulative average to AAG ratio figures

Figure 2a. Cumulative average-to-AAG ratios for individual chemicals with AAGs

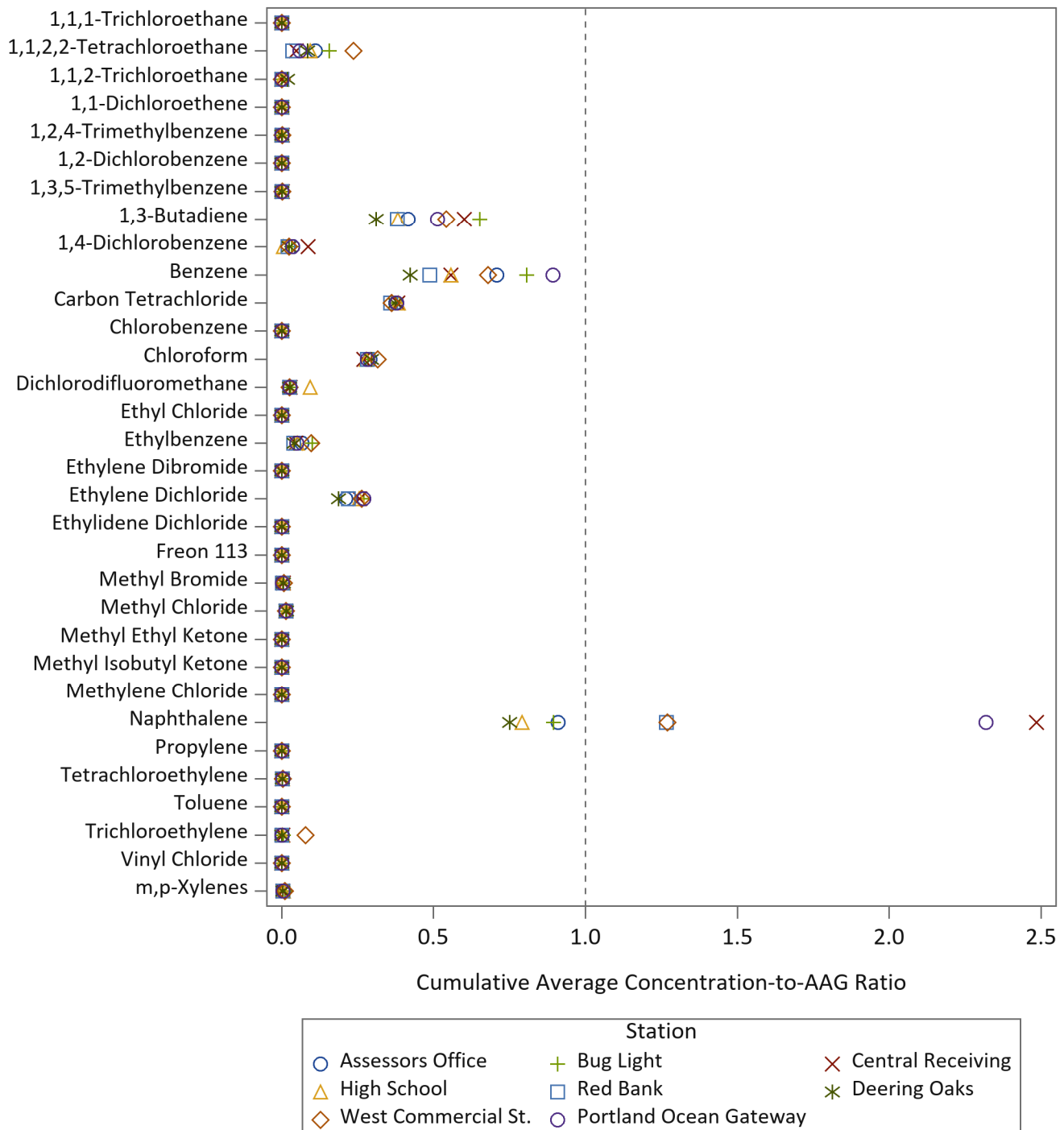


Figure 2a shows the ratio of the time-weighted cumulative average, i.e., the average of all individual 24-hour samples collected to date for an individual chemical by station, to the Maine Ambient Air Guideline (AAG) for all chemicals with an AAG. An AAG is an exposure level believed to be associated with a minimal risk of an adverse health effect from life-time exposure, even for sensitive members of the population. Ratios that are greater than 1, the dashed grey reference line, indicate that the current 24-hour sample cumulative average exceeds the chemical-specific AAG. Currently, only the chemicals naphthalene (above) and acrolein (Figure 2b) are trending with cumulative averages above an AAG. Sampling data obtained from Maine DEP current through Jan. 2020.

Figure 2b. Cumulative average-to-AAG ratios for acrolein

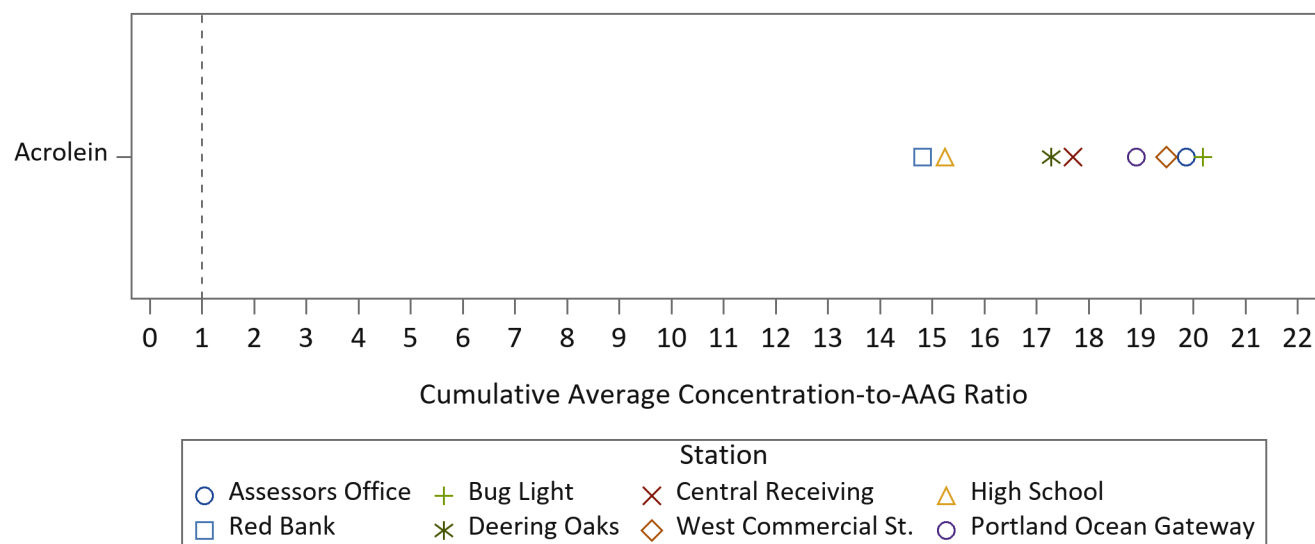


Figure 2b shows the ratio of the time-weighted cumulative average to the Maine Ambient Air Guideline (AAG) for acrolein. All cumulative averages for individual stations exceed the acrolein AAG; this is also the case for all sampling locations across the State of Maine. Sampling data obtained from Maine DEP current through Jan. 2020.

B. Cumulative average uncertainty figures

Figure 3. Average 24-hour sampling results with 95% confidence interval by station for Acrolein

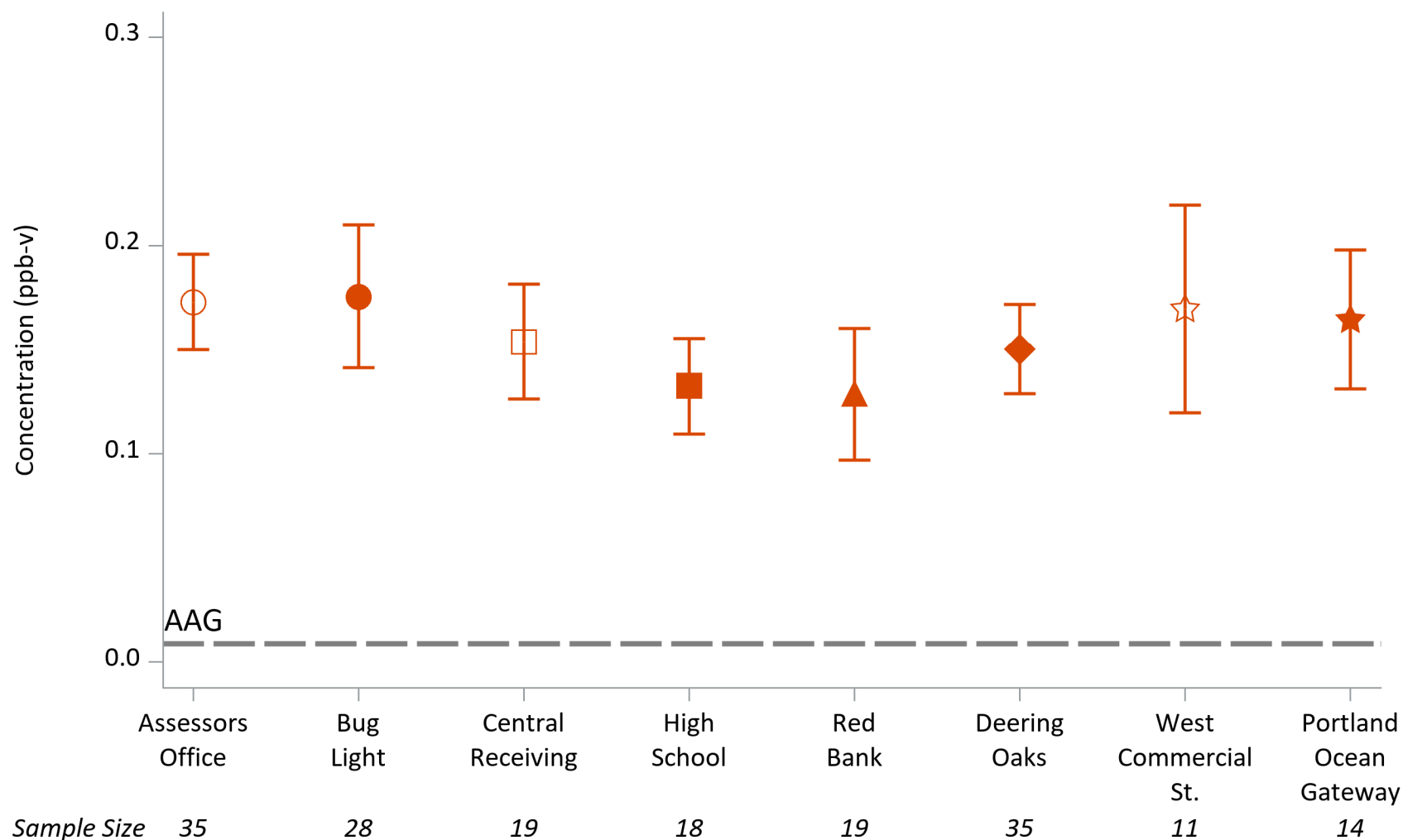


Figure 3 shows the average acrolein level as a marker (circle, square, diamond, triangle, etc.) with 95% confidence interval (vertical lines) for all individual 24-hour samples collected by station. 24-hour air samples are collected every 6 days. The number of samples collected by station is shown as the sample size. AAG = State of Maine Ambient Air Guideline, which is an exposure level believed to be associated with a minimal risk of an adverse health effect from life-time exposure, even for sensitive members of the population. Average acrolein levels exceed the AAG at all sampling locations. Sampling data obtained from Maine DEP current through Jan. 2020.

Figure 4. Average 24-hour sampling results with 95% confidence interval by station for Benzene

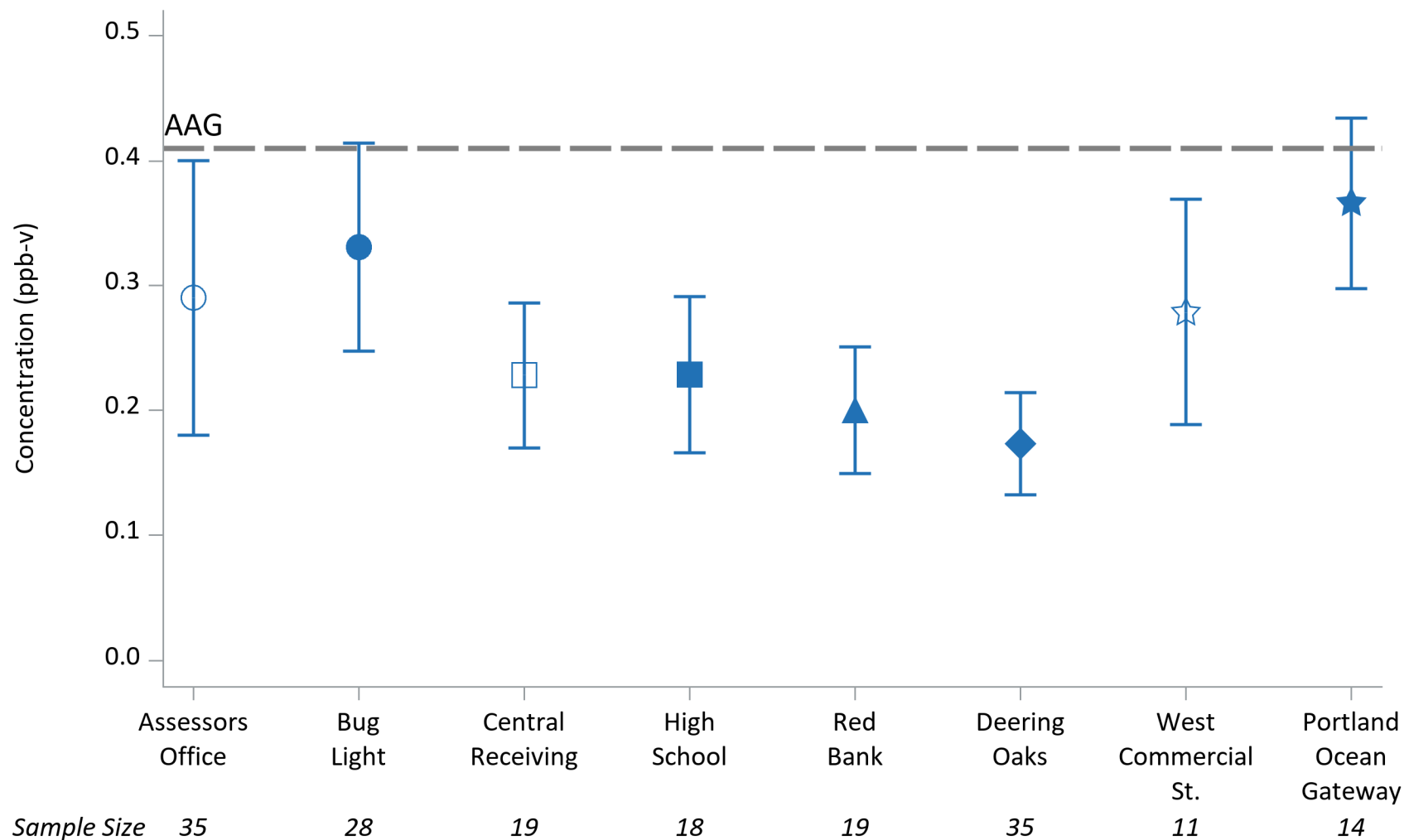


Figure 4 shows the average benzene level as a marker (circle, square, diamond, triangle, etc.) with 95% confidence interval (vertical lines) for all individual 24-hour samples collected by station. 24-hour air samples are collected every 6 days. The number of samples collected by station is shown as the sample size. AAG = State of Maine Ambient Air Guideline, which is an exposure level believed to be associated with a minimal risk of an adverse health effect from life-time exposure, even for sensitive members of the population. While average levels of benzene are below the AAG at all sampling locations, for two locations the 95% confidence interval does extend above the AAG reference line. Sampling data obtained from Maine DEP current through Jan. 2020.

Figure 5. Average 24-hour sampling results with 95% confidence interval by station for Naphthalene

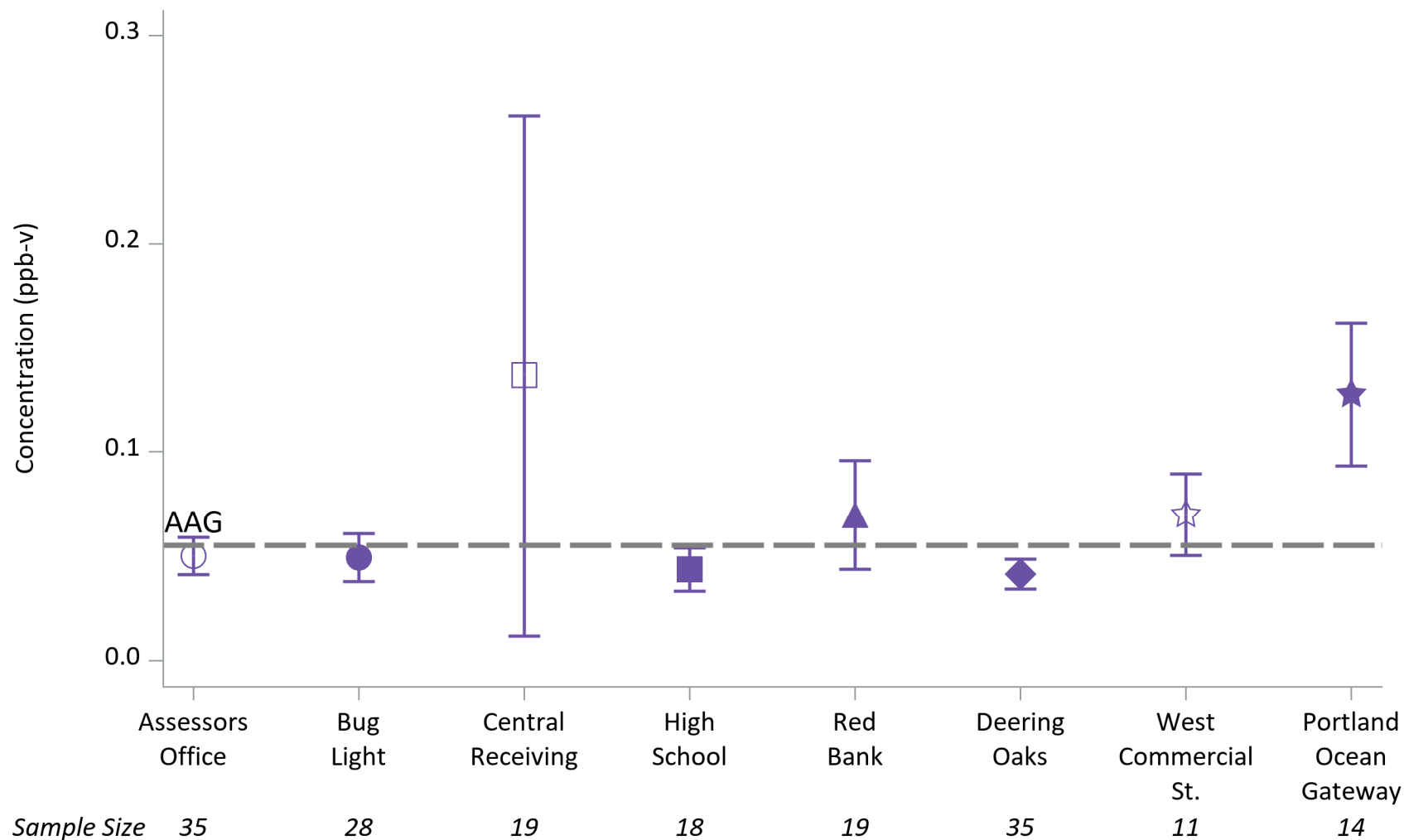


Figure 5 shows the average naphthalene level as a marker (circle, square, diamond, triangle, etc.) with 95% confidence interval (vertical lines) for all individual 24-hour samples collected by station. 24-hour air samples are collected every 6 days. The number of samples collected by station is shown as the sample size. AAG = State of Maine Ambient Air Guideline, which is an exposure level believed to be associated with a minimal risk of an adverse health effect from life-time exposure, even for sensitive members of the population. Four stations have average naphthalene levels that are above the AAG, and another two have 95 % confidence limits that extend above the AAG. Sampling data obtained from Maine DEP current through Jan. 2020.

Figure 6. Average 24-hour sampling results with 95% confidence interval by station for 1,3-Butadiene

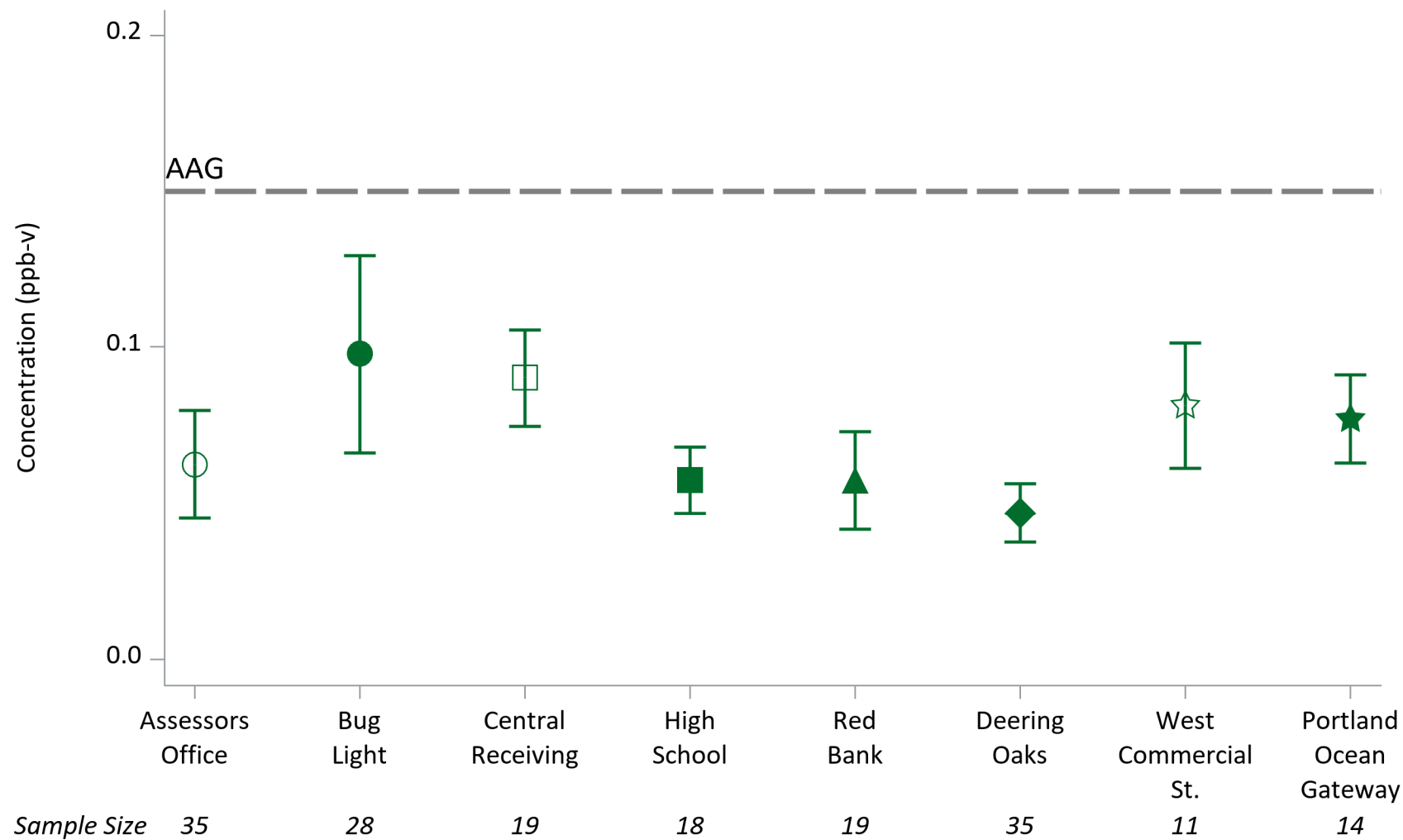


Figure 6 shows the average 1,3-butadiene level as a marker (circle, square, diamond, triangle, etc.) with 95% confidence interval (vertical lines) for all individual 24-hour samples collected by station. 24-hour air samples are collected every 6 days. The number of samples collected by station is shown as the sample size. AAG = State of Maine Ambient Air Guideline, which is an exposure level believed to be associated with a minimal risk of an adverse health effect from life-time exposure, even for sensitive members of the population. All averages and confidence limits are below the AAG. Sampling data obtained from Maine DEP current through Jan. 2020.

Figure 7. Average 24-hour sampling results with 95% confidence interval by station for Carbon Tetrachloride

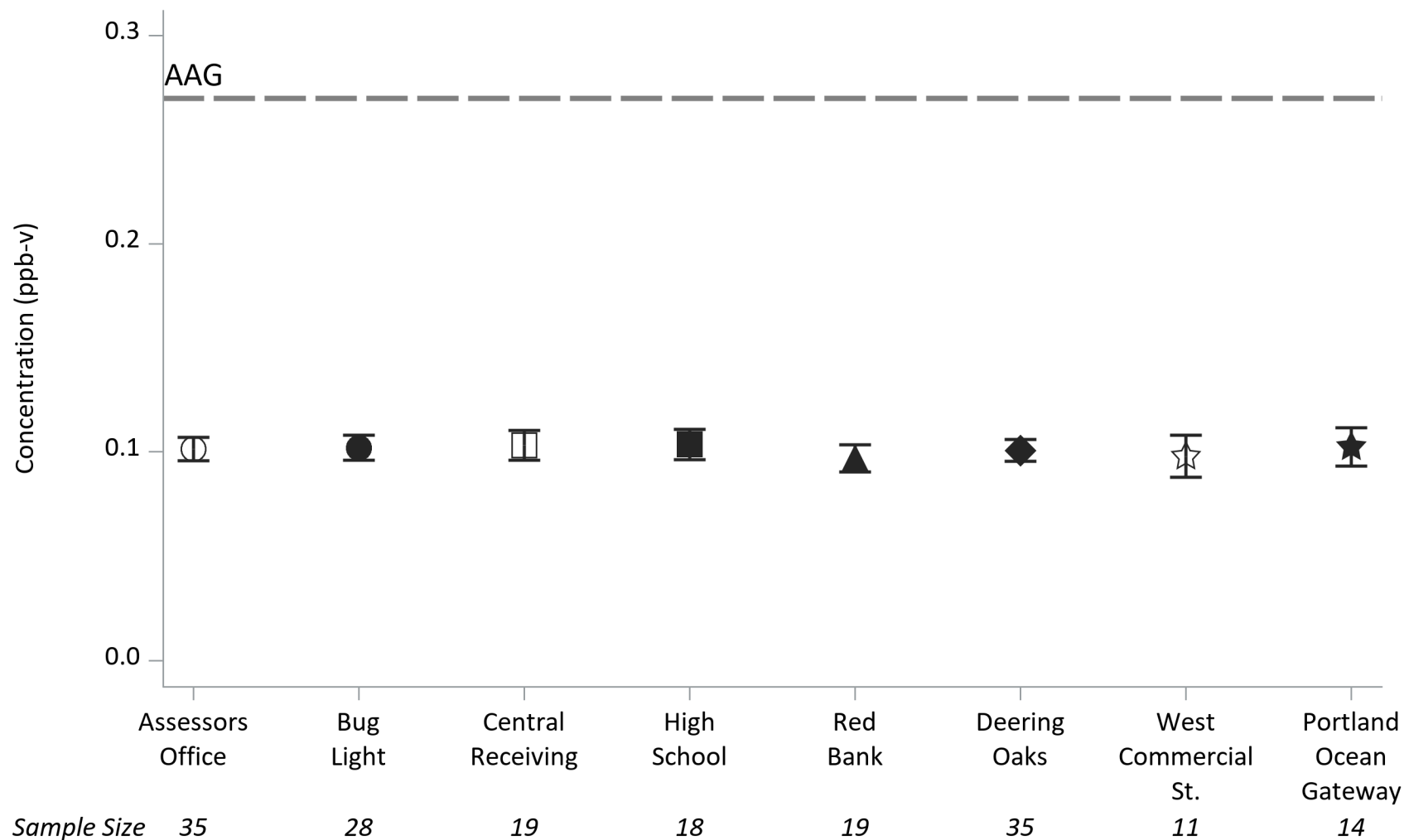


Figure 7 shows the average carbon tetrachloride level as a marker (circle, square, diamond, triangle, etc.) with 95% confidence interval (vertical lines) for all individual 24-hour samples collected by station. 24-hour air samples are collected every 6 days. The number of samples collected by station is shown as the sample size. AAG = State of Maine Ambient Air Guideline, which is an exposure level believed to be associated with a minimal risk of an adverse health effect from life-time exposure, even for sensitive members of the population. All averages and 95% confidence limits are below the AAG. Sampling data obtained from Maine DEP current through Jan. 2020.

C. Cumulative average time trends figures

Figure 8. Individual 24-hour sampling results with the cumulative average time trends for Naphthalene

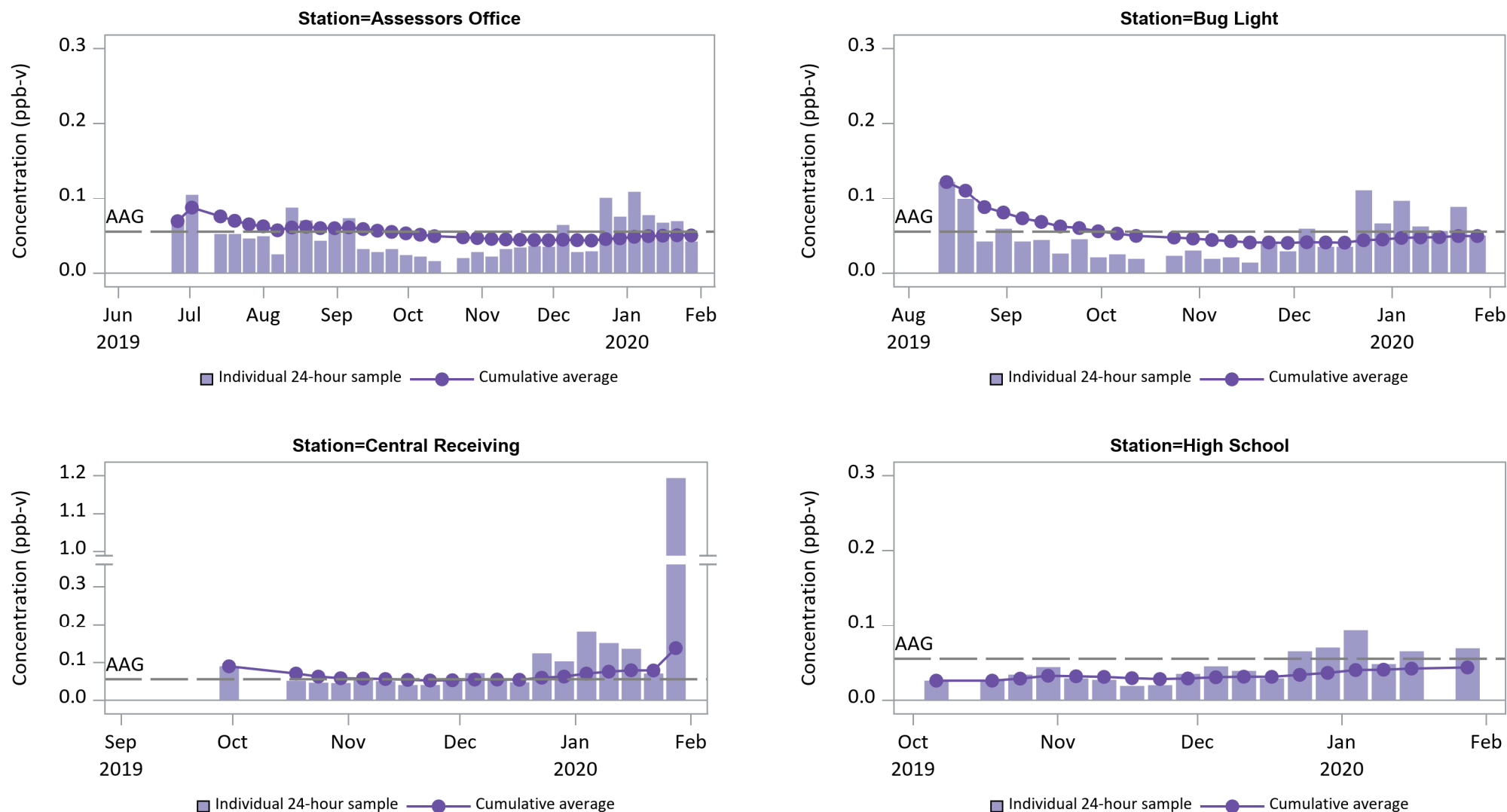


Figure 8 shows the individual 24-hour sample results by date for naphthalene displayed as bars with the cumulative average displayed as a line with markers showing the average trend over time. 24-hour air samples are collected every 6 days. AAG = State of Maine Ambient Air Guideline, which is an exposure level believed to be associated with a minimal risk of an adverse health effect from life-time exposure, even for sensitive members of the population. Sampling data obtained from Maine DEP current through Jan. 2020.

Figure 8. Individual 24-hour sampling results with the cumulative average time trends for Naphthalene

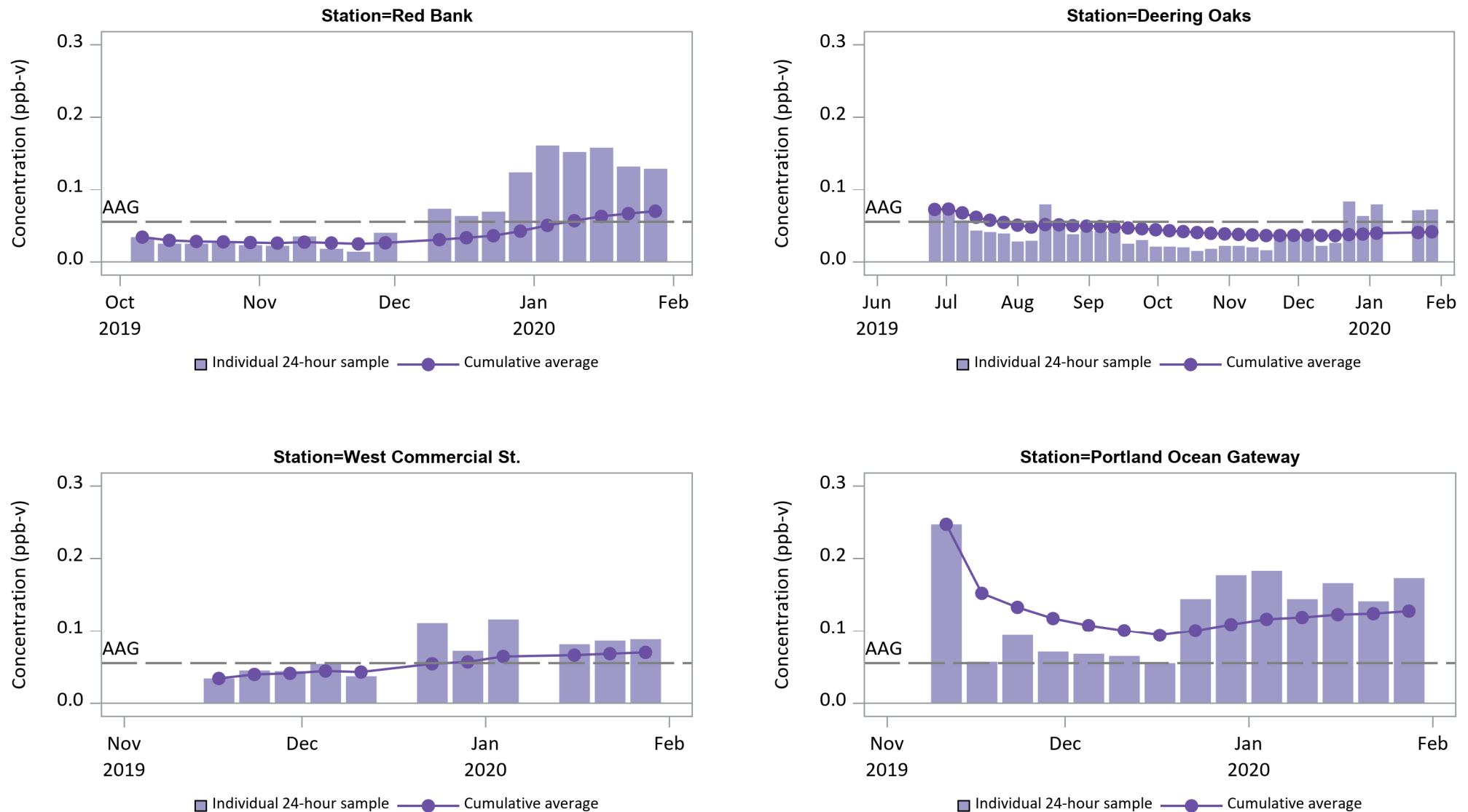


Figure 8 shows the individual 24-hour sample results by date for naphthalene displayed as bars with the cumulative average displayed as a line with markers showing the average trend over time. 24-hour air samples are collected every 6 days. AAG = State of Maine Ambient Air Guideline, which is an exposure level believed to be associated with a minimal risk of an adverse health effect from life-time exposure, even for sensitive members of the population. Sampling data obtained from Maine DEP current through Jan. 2020.

Figure 9. Individual 24-hour sampling results with the cumulative average time trends for Benzene

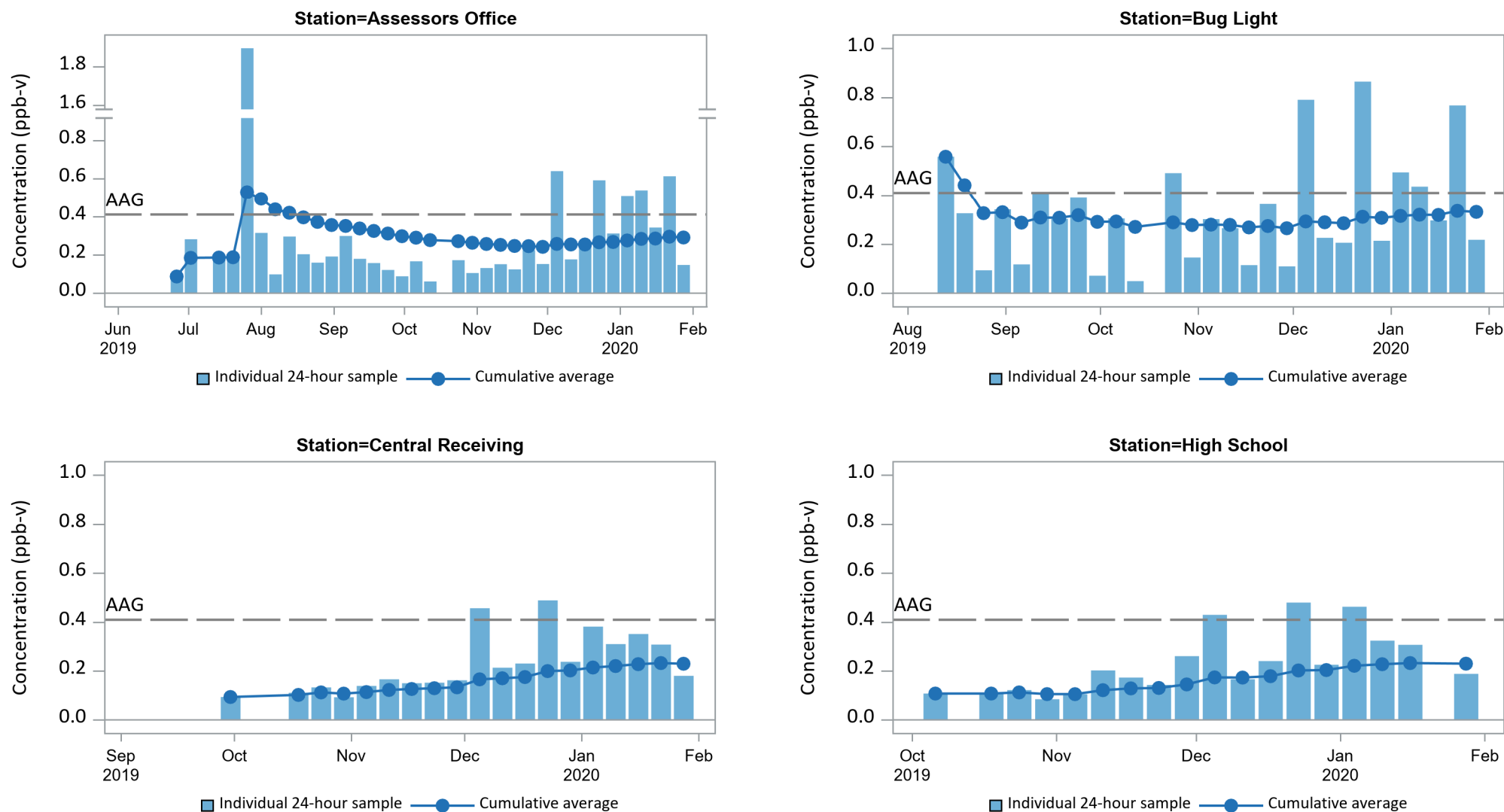


Figure 9 shows the individual 24-hour sample results by date for benzene displayed as bars with the cumulative average displayed as a line with markers showing the average trend over time. 24-hour air samples are collected every 6 days. AAG = State of Maine Ambient Air Guideline, which is an exposure level believed to be associated with a minimal risk of an adverse health effect from life-time exposure, even for sensitive members of the population. Sampling data obtained from Maine DEP current through Jan. 2020.

Figure 9. Individual 24-hour sampling results with the cumulative average time trends for Benzene

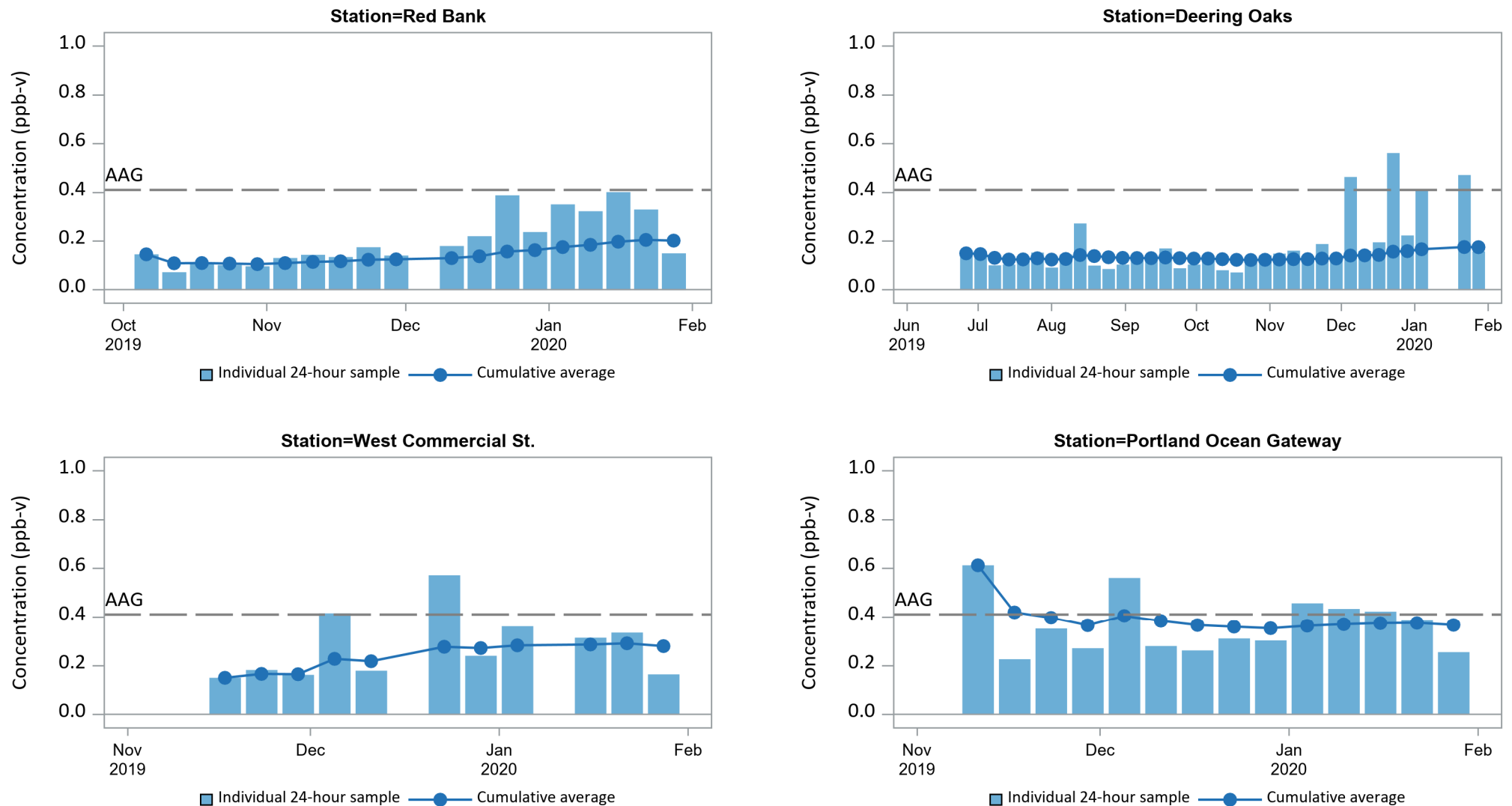


Figure 9 shows the individual 24-hour sample results by date for benzene displayed as bars with the cumulative average displayed as a line with markers showing the average trend over time. 24-hour air samples are collected every 6 days. AAG = State of Maine Ambient Air Guideline, which is an exposure level believed to be associated with a minimal risk of an adverse health effect from life-time exposure, even for sensitive members of the population. Sampling data obtained from Maine DEP current through Jan. 2020.

Figure 10. Individual 24-hour sampling results with the cumulative average time trends for 1,3-Butadiene

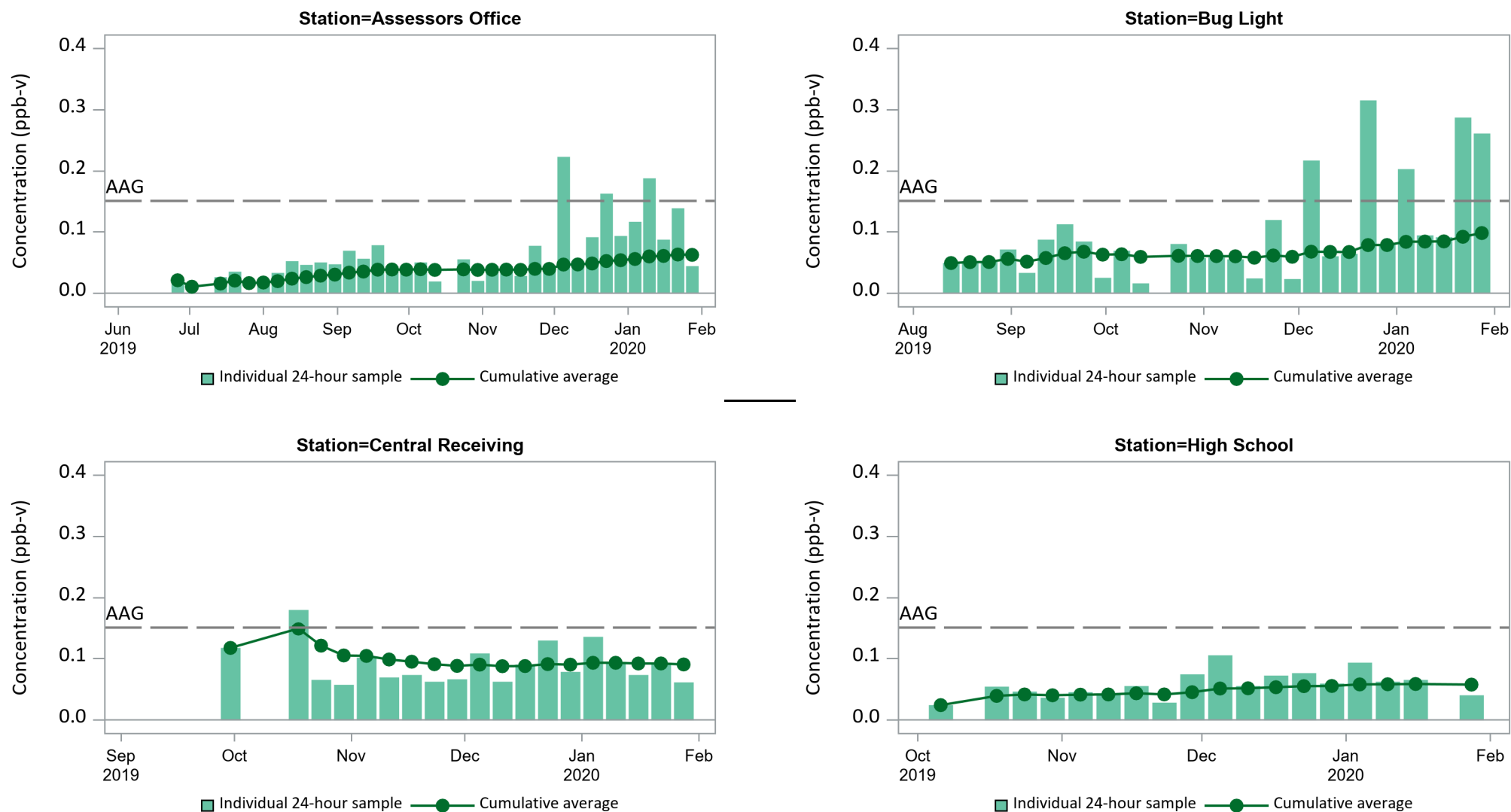


Figure 10 shows the individual 24-hour sample results by date for 1,3-butadiene displayed as bars with the cumulative average displayed as a line with markers showing the average trend over time. 24-hour air samples are collected every 6 days. AAG = State of Maine Ambient Air Guideline, which is an exposure level believed to be associated with a minimal risk of an adverse health effect from life-time exposure, even for sensitive members of the population. Sampling data obtained from Maine DEP current through Jan. 2020.

Figure 10. Individual 24-hour sampling results with the cumulative average time trends for 1,3-Butadiene

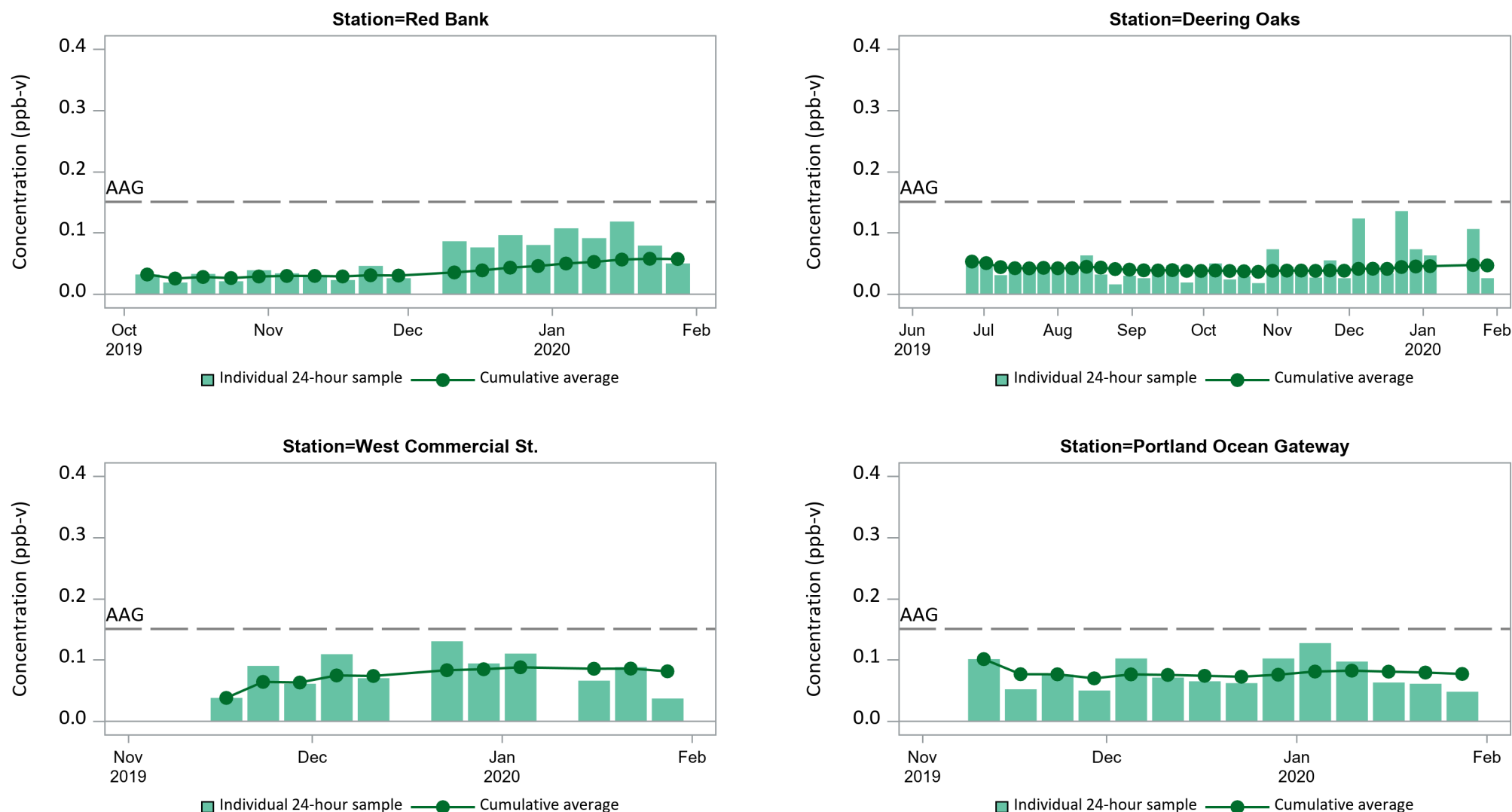


Figure 10 shows the individual 24-hour sample results by date for 1,3-butadiene displayed as bars with the cumulative average displayed as a line with markers showing the average trend over time. 24-hour air samples are collected every 6 days. AAG = State of Maine Ambient Air Guideline, which is an exposure level believed to be associated with a minimal risk of an adverse health effect from life-time exposure, even for sensitive members of the population. Sampling data obtained from Maine DEP current through Jan. 2020.

24 Hour Samples From Portland Deering Oaks for January 2020

■ 2018 Total of Annual Averages of the Group @ Portland Deering Oaks

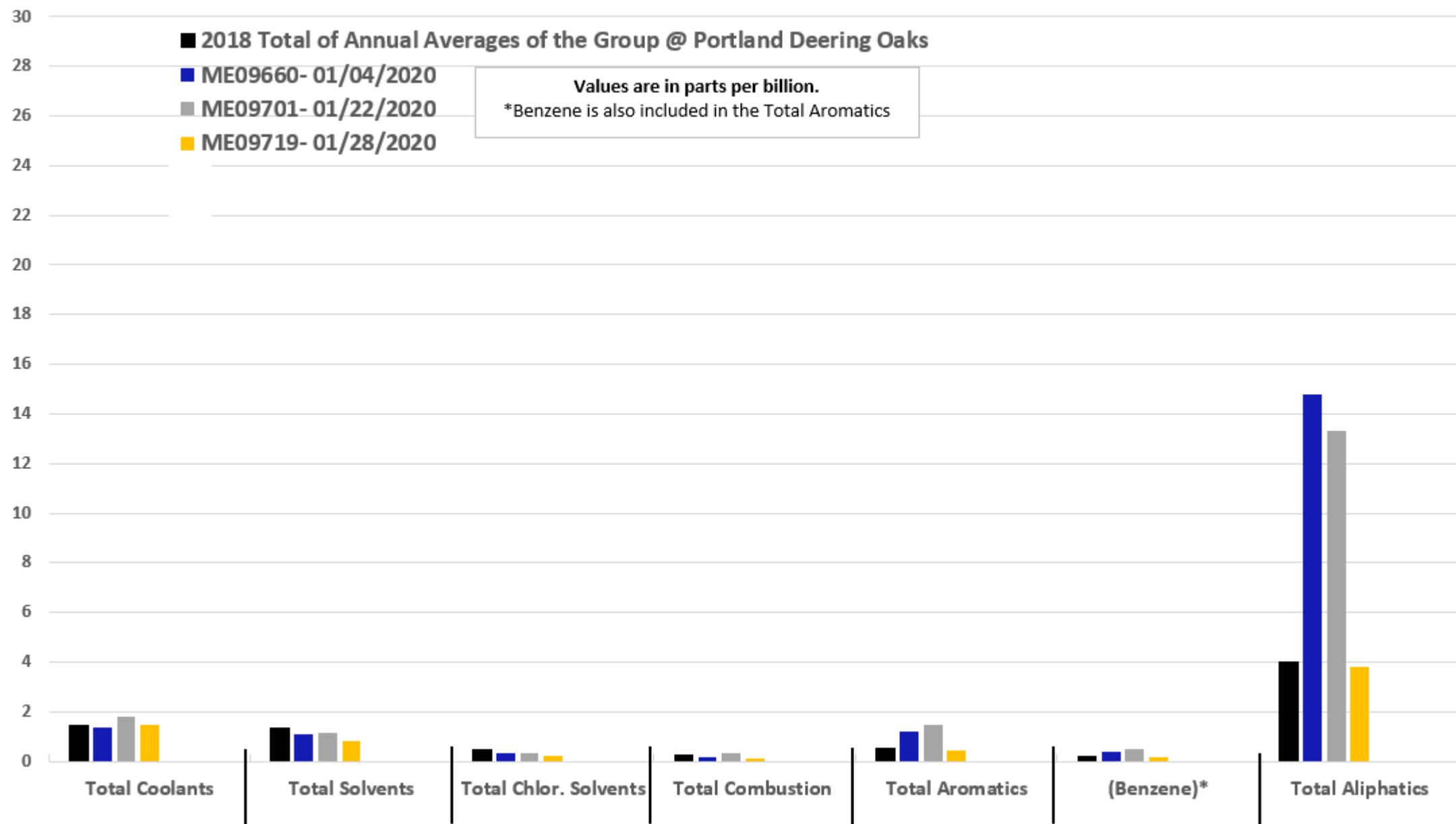
■ ME09660- 01/04/2020

■ ME09701- 01/22/2020

■ ME09719- 01/28/2020

Values are in parts per billion.

*Benzene is also included in the Total Aromatics



24 Hour Samples From Portland West Commercial for January 2020

■ 2018 Total of Annual Averages of the Group @ Portland Deering Oaks

■ ME09661- 01/04/2020

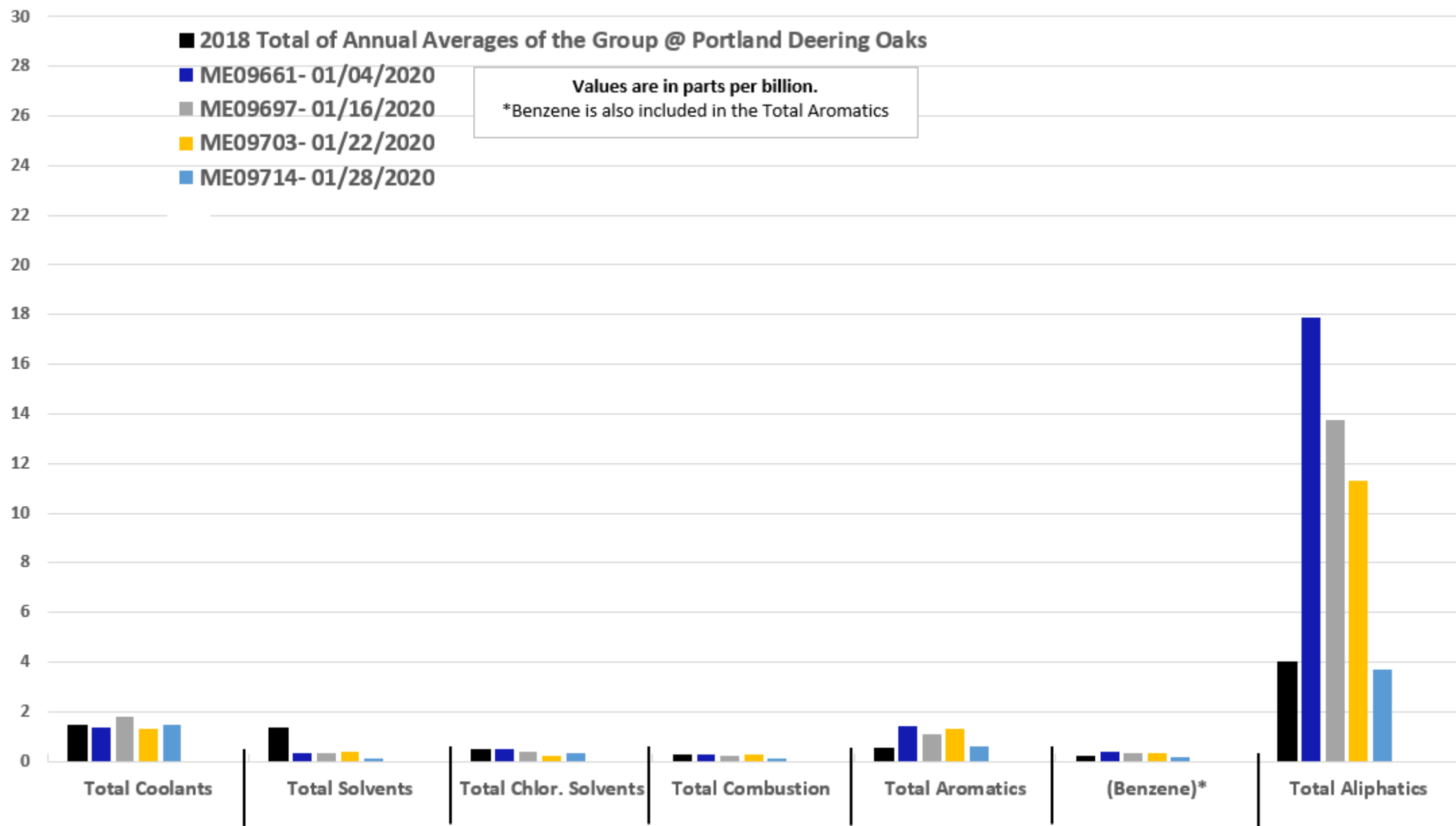
■ ME09697- 01/16/2020

■ ME09703- 01/22/2020

■ ME09714- 01/28/2020

Values are in parts per billion.

*Benzene is also included in the Total Aromatics



24 Hour Samples From Portland Ocean Gateway for January 2020

■ 2018 Total of Annual Averages of the Group @ Portland Deering Oaks

■ ME09663- 01/04/2020

■ ME09662- 01/10/2020

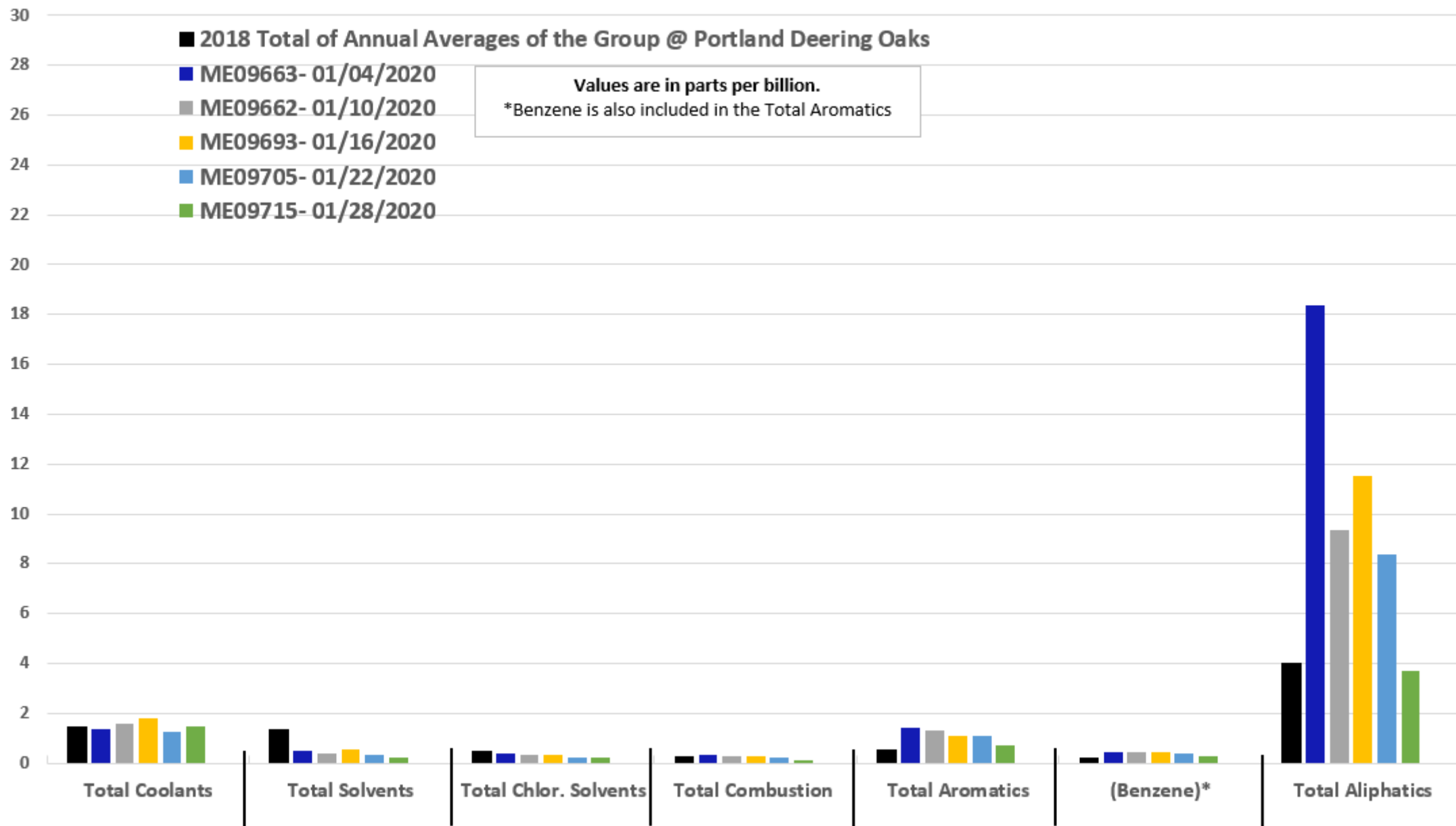
■ ME09693- 01/16/2020

■ ME09705- 01/22/2020

■ ME09715- 01/28/2020

Values are in parts per billion.

*Benzene is also included in the Total Aromatics



24 Hour Samples From Portland Deering Oaks for Febuary 2020

■ 2018 Total of Annual Averages of the Group @ Portland Deering Oaks

■ ME09736- 02/03/2020

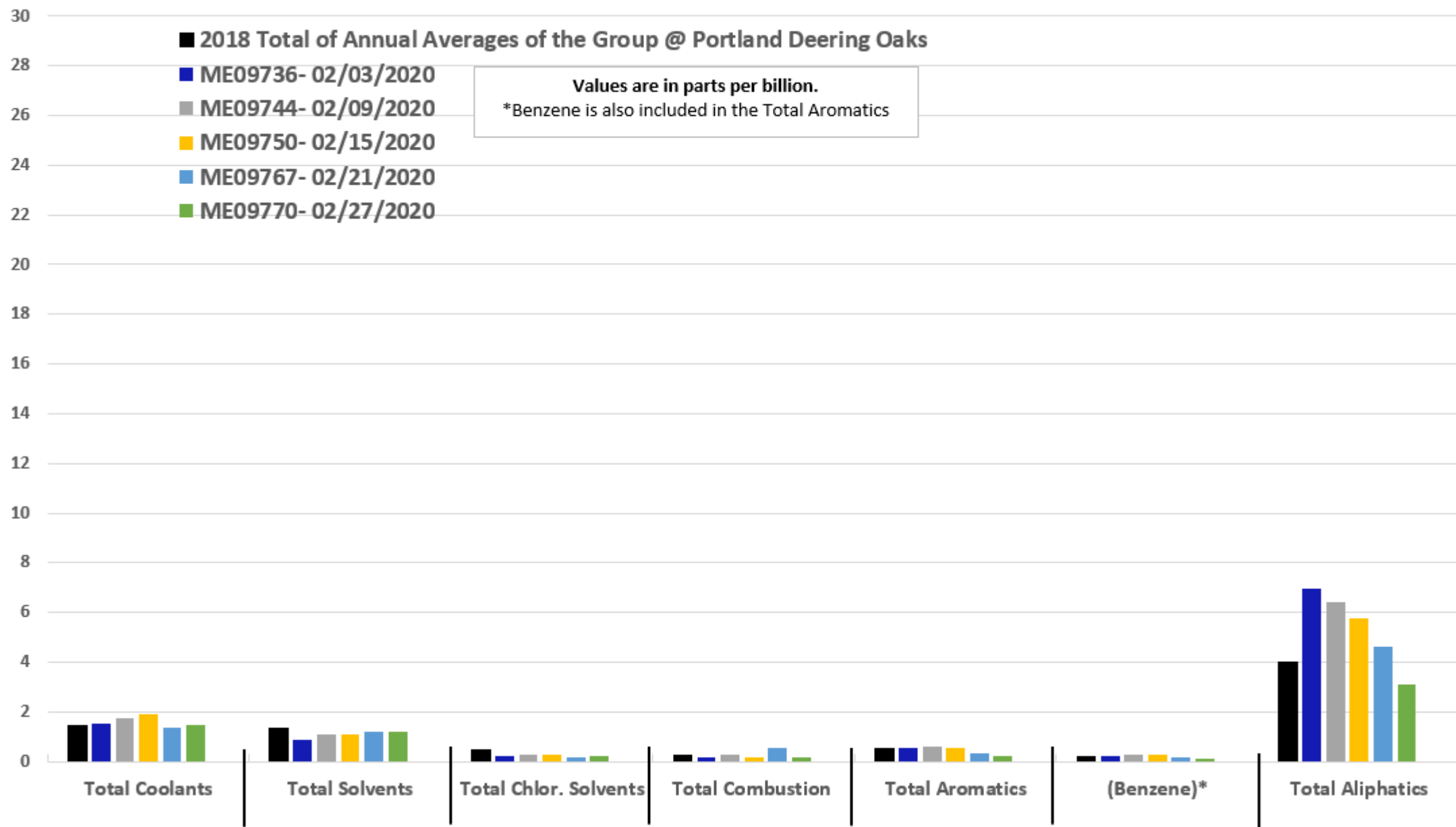
■ ME09744- 02/09/2020

■ ME09750- 02/15/2020

■ ME09767- 02/21/2020

■ ME09770- 02/27/2020

Values are in parts per billion.
*Benzene is also included in the Total Aromatics



24 Hour Samples From Portland West Commercial for March 2020

■ 2018 Total of Annual Averages of the Group @ Portland Deering Oaks

■ ME09793- 03/04/2020

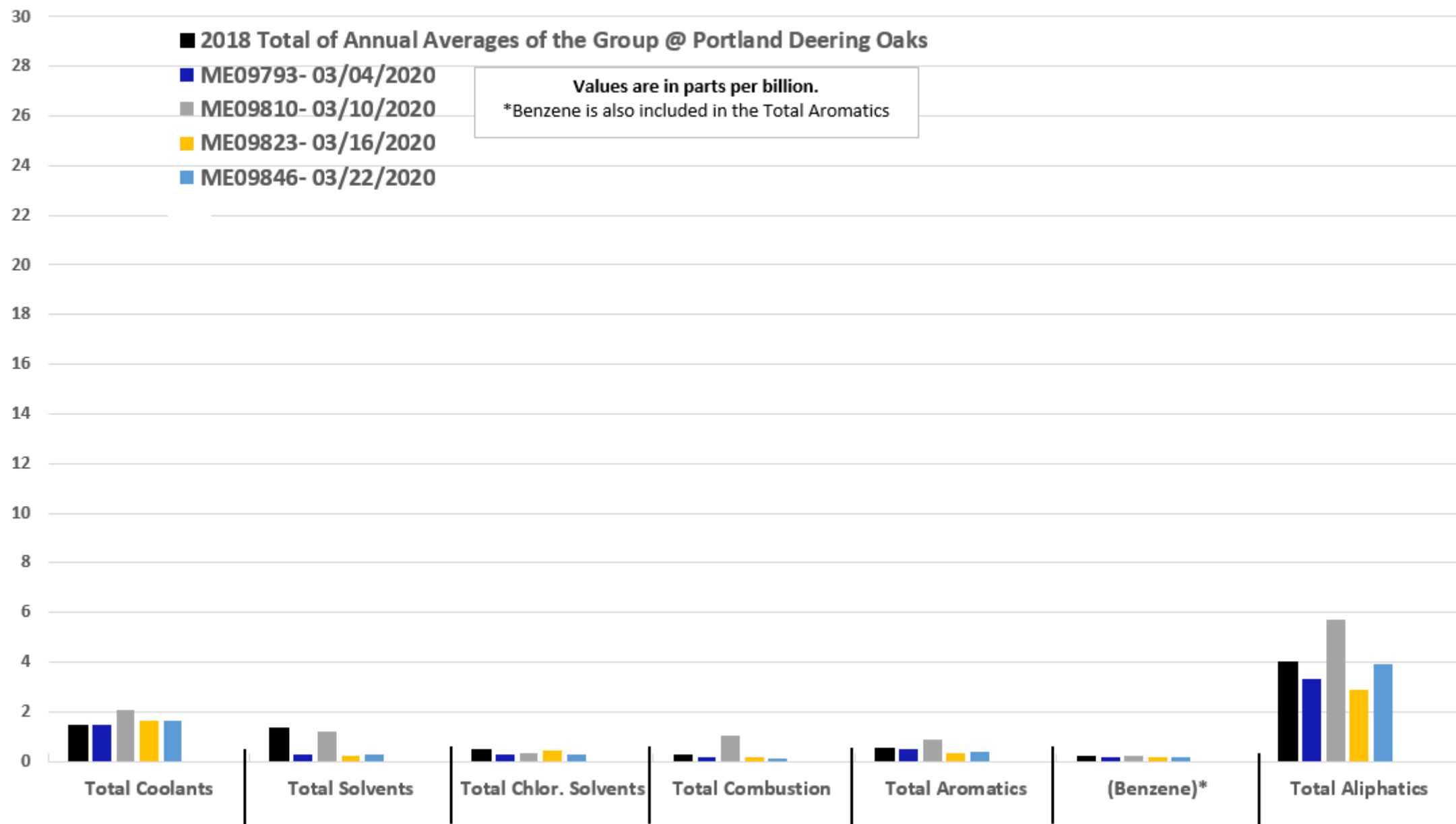
■ ME09810- 03/10/2020

■ ME09823- 03/16/2020

■ ME09846- 03/22/2020

Values are in parts per billion.

*Benzene is also included in the Total Aromatics



24 Hour Samples From Portland Ocean Gateway for March 2020

■ 2018 Total of Annual Averages of the Group @ Portland Deering Oaks

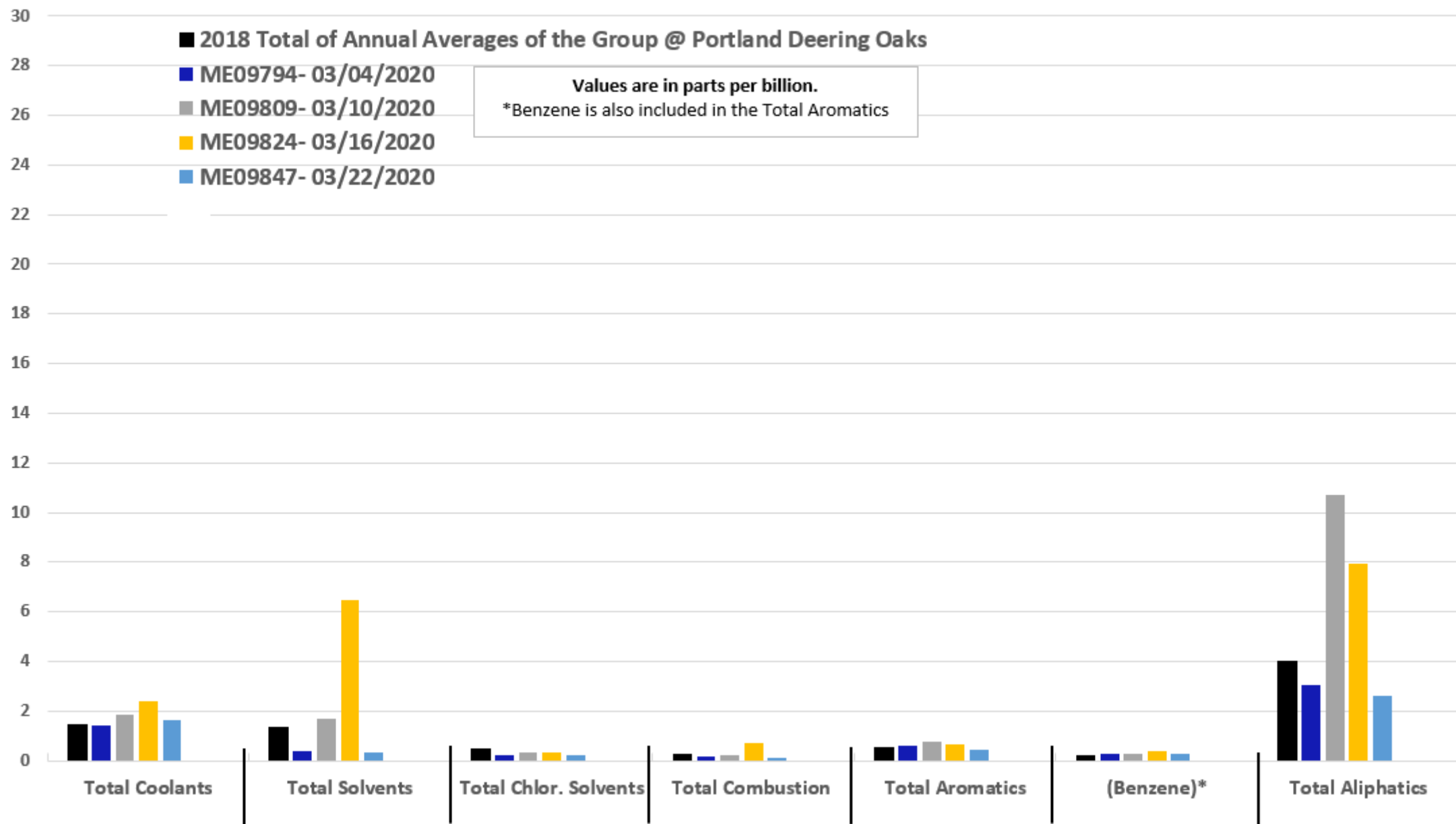
■ ME09794- 03/04/2020

■ ME09809- 03/10/2020

■ ME09824- 03/16/2020

■ ME09847- 03/22/2020

Values are in parts per billion.
*Benzene is also included in the Total Aromatics



24 Hour Samples From Portland Deering Oaks for March 2020

■ 2018 Total of Annual Averages of the Group @ Portland Deering Oaks

■ ME09795- 03/04/2020

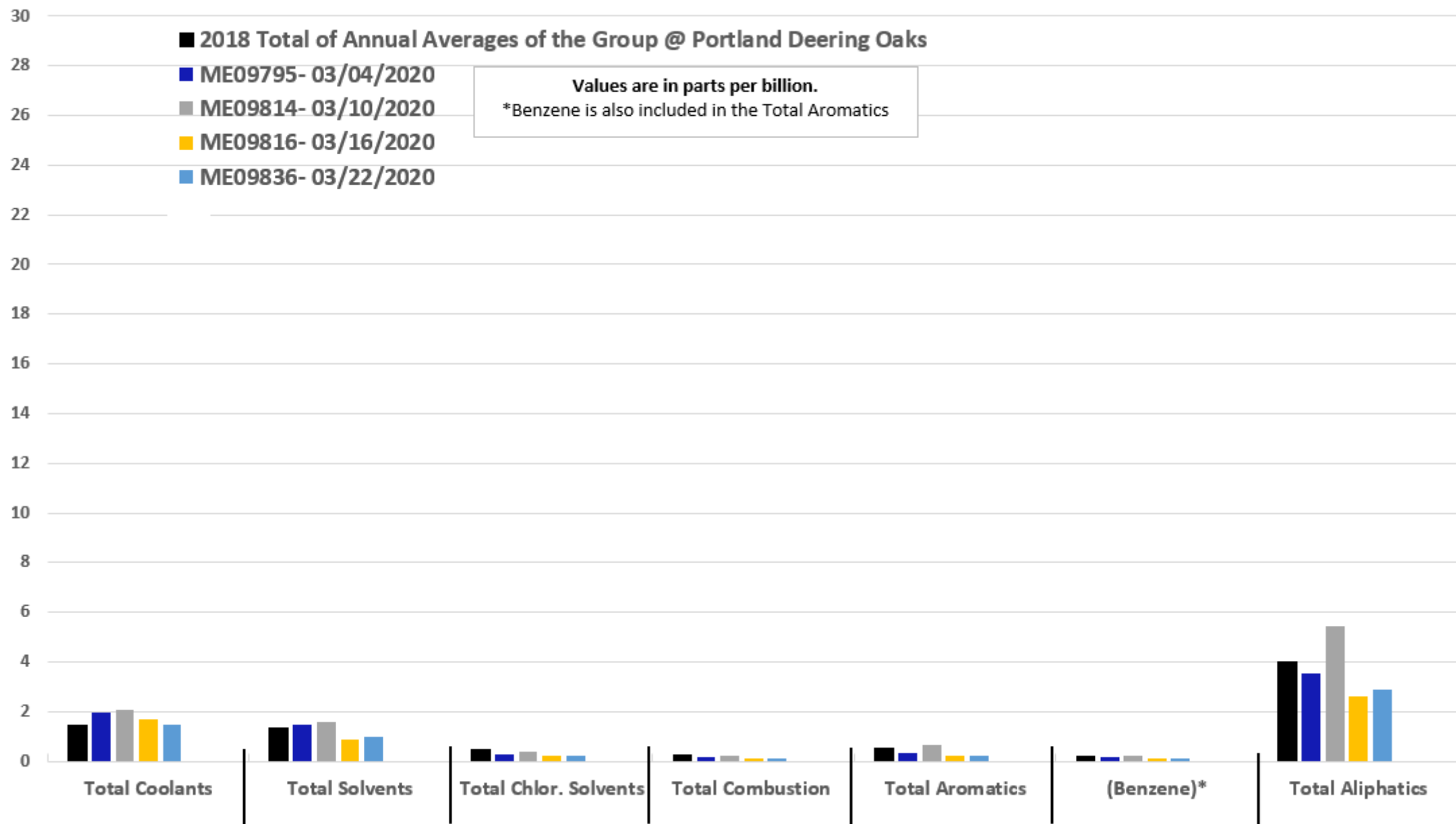
■ ME09814- 03/10/2020

■ ME09816- 03/16/2020

■ ME09836- 03/22/2020

Values are in parts per billion.

*Benzene is also included in the Total Aromatics



24 Hour Samples From Portland West Commercial for Febuary 2020

■ 2018 Total of Annual Averages of the Group @ Portland Deering Oaks

■ ME09729- 02/03/2020

■ ME09742- 02/09/2020

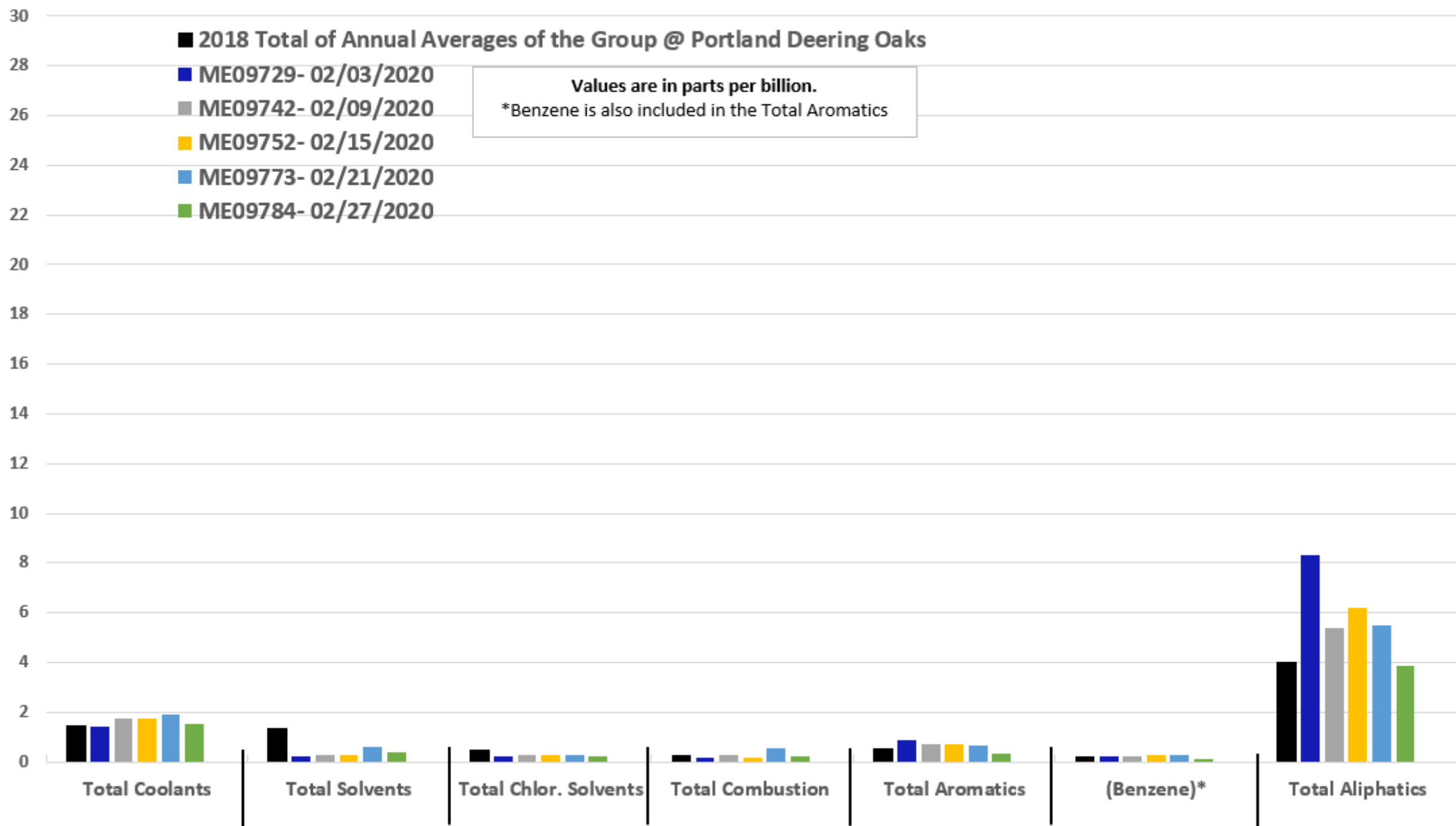
■ ME09752- 02/15/2020

■ ME09773- 02/21/2020

■ ME09784- 02/27/2020

Values are in parts per billion.

*Benzene is also included in the Total Aromatics



24 Hour Samples From Portland Ocean Gateway for February 2020

■ 2018 Total of Annual Averages of the Group @ Portland Deering Oaks

■ ME09723- 02/03/2020

■ ME09738- 02/09/2020

■ ME09785- 02/27/2020

Values are in parts per billion.

*Benzene is also included in the Total Aromatics

