

# EAST SIDE COASTAL RESILIENCY

SANDRESM2 | PROJECT AREA 2

## AIR QUALITY MONITORING REPORT

### FIRST HALF | 2021

ISSUE DATE: JULY 1, 2021 (REISSUED FEBRUARY 2022 WITH JUNE DATA AND REVISED FORMAT)

PERIOD COVERED: JANUARY 2021 – JUNE 2021

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# PART 1

## I. Air Quality Monitoring: Introduction

The East Side Coastal Resiliency (ESCR) project is a coastal protection initiative, jointly funded by the City of New York and the federal government, aimed at reducing flood risk due to coastal storms and sea level rise on Manhattan's East Side from East 25th Street to Montgomery Street. The ESCR project will protect 110,000 New Yorkers from the impacts of climate change by increasing resiliency for communities, properties, businesses, critical infrastructure, and public open spaces. In addition to providing flood protection, the project will strengthen and enhance waterfront spaces on Manhattan's East Side by improving accessibility, increasing ecological diversity, and delivering improved recreational amenities to a vibrant and highly diverse community.

The project is divided into three project areas: Project Area 1 (from Montgomery Street to E. 15<sup>th</sup> Street, including East River Park), Project Area 2 (E. 15<sup>th</sup> Street to E. 25<sup>th</sup> Street, including Murphy Brothers Playground, Stuyvesant Cove Park, and Asser Levy Playground), and Parallel Conveyance (work to improve inland drainage on local streets between Montgomery Street and E. 25<sup>th</sup> Street).

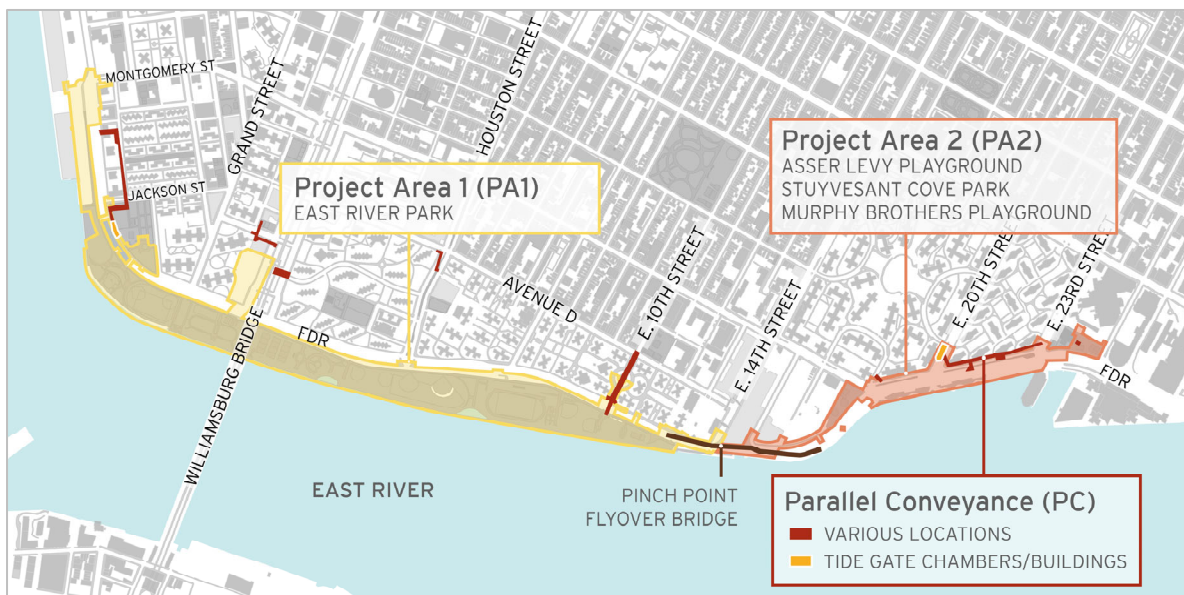


Fig.1 East Side Coastal Resiliency Project Areas

The ESCR team will be conducting air quality monitoring throughout construction in all three Project Areas to ensure the ongoing health and safety of the adjacent community. In particular, the ESCR Air Quality Monitoring program will measure levels of Particulate Matter (PM) at two sizes: PM10 and PM2.5.

As described by the [Environmental Protection Agency \(EPA\)](#):

PM stands for **particulate matter** (also called particle pollution): the term for a mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye. Others are so small they can only be detected using an electron microscope. Particle pollution includes:

- PM10: inhalable particles, with diameters that are generally 10 micrometers and smaller (typically from dust)
- PM2.5: fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller (typically from vehicle emissions)



The Clean Air Act requires EPA to set national air quality standards for particulate matter, as one of the six criteria pollutants considered harmful to public health and the environment. The law also requires EPA to periodically review the standards to ensure that they provide adequate health and environmental protection, and to update those standards as necessary. National Ambient Air Quality Standards (NAAQS) for PM pollution specify a maximum amount of PM to be present in outdoor air.

The **Permissible Exposure Limit (PEL)** is a regulatory limit to protect public health/welfare set by the National Ambient Air Quality Standards (NAAQS) in line with the requirements of the Clean Air Act on the amount or concentration of a substance in the air. The EPA has set a **24-hour time weighted average (TWA)** as standard for evaluating Particulate Matter (PM) levels, meaning that they average potential PM exposure over a 24-hour period. This is also referred to as the **daily value**. \*Note: in the line graphs presented in the monthly data plots, readings are averaged in 15-minute intervals and do not represent the standard TWA of 24-hrs. This more conservative approach will help the ESCR project team monitor the project’s effect on air quality more closely.

The **Action Level (AL)** is lower than the Permissible Exposure Limit (PEL) and represents a level set by the ESCR Air Quality Monitoring Plan which, when reached, will alert the contractor that there has been an increase in particulate matter so that they can assess construction activities and take necessary measures to remediate the condition. Automated alerts are dispatched to the general contractor and the construction management team whenever the AL is exceeded.

The table here illustrates the Permissible Exposure Limit and Action Levels for net PM2.5 and PM10 concentrations over a 24-hour Time Weighted Average (TWA). These levels are measured in micrograms per cubic meter air (µg/m3):

	<b>Action Level (AL) over a 24-hour TWA</b>	<b>Permissible Exposure Limit (PEL) over a 24-hour TWA</b>
<b>PM2.5</b>	25 µg/m3	35 µg/m3
<b>PM10</b>	100 µg/m3	150 µg/m3

The ESCR Final Environmental Impact Statement analyzed the potential impact of the construction on community air quality and determined that **with consistent air quality monitoring and application of measures to reduce pollutant emissions and suppress dust, “construction of the Preferred Alternative would not result in any predicted concentrations above the National Ambient Air Quality Standards (NAAQS) for NO2, CO, and PM10 or the de minimis thresholds for PM2.5 from nonroad and on-road sources. Therefore, *no significant adverse air quality impacts are predicted from the construction of the Preferred Alternative.*”** (ESCR FEIS, Chapter 6.10 Construction Air-Quality, 6.10-2)

Along with air quality monitoring, the contractor is required to take extensive preventative measures to control dust and limit vehicle emissions. Potential mitigation techniques include but are not limited to:

- use of water spray for roads, trucks, excavation areas and stockpiles
- use of anchored tarps to cover stockpiles
- use of truck covers during soil transport within site limits and during off-site transport
- employment of extra care during dry and/or high-wind periods
- use of gravel or recycled concrete aggregate on egress and other roadways to provide a clean and dust-free road surface
- use of a truck wheel wash at site access/egress points to prevent fugitive dust and off-site migration of dust and other particulates

## How to Read the Data Plots

The PM readings that follow by month in this report are shown in data plots, as below. The data plots illustrate **Net Particulate Matter (Net PM)** levels (blue line on data plot) in a **15-minute Time Weighted Average (TWA)**. As mentioned above, the federal limits for PM exposure are evaluated on a **24-hour TWA**. By evaluating PM readings on the 15-minute TWA, the ESCR project can ensure that Net PM never exceeds the 24-hour TWA, or daily value.

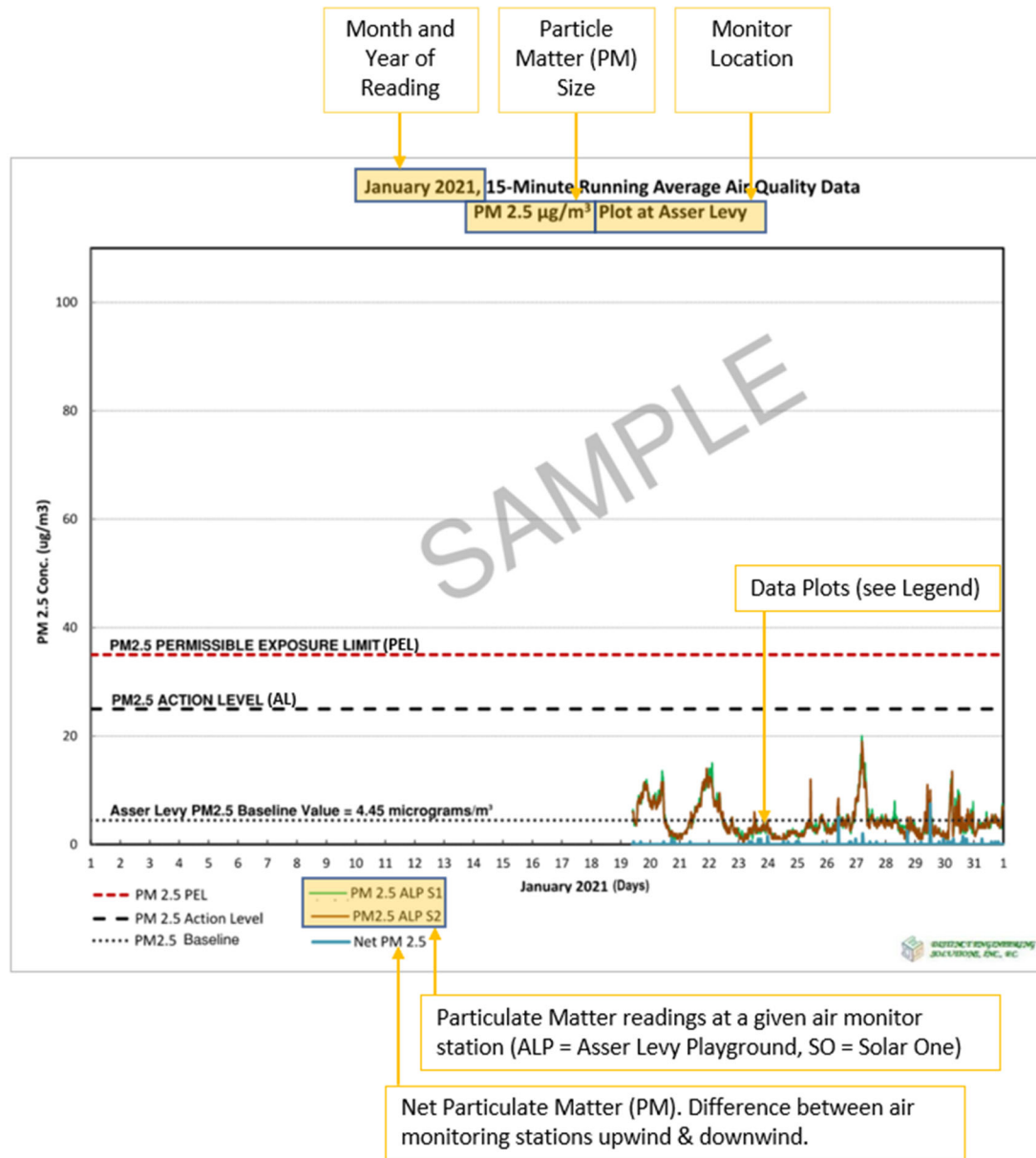


Fig.2 Sample Air Quality Data Plot

The **Net particulate matter (Net PM)** readings are determined as the difference between the upwind and downwind monitoring stations as determined on any day given the wind speed and wind direction. At each construction location at least two air quality monitors are required to determine the Net PM. The Net PM value is important because it measures the **potential increase of particulate matter due to construction activities**. If the wind-speed is less than 0.5 meters per second, the downwind station is considered undetermined and the Net PM will be absent from the data plot. In these circumstances, high readings at one or both of the monitoring stations will still be noted, however the increased levels in the PM readings may be due to conditions unrelated to construction.

And **exceedance** is a daily value that is above the level of the 24-hour Time Weighted Average after rounding to the nearest 10  $\mu\text{g}/\text{m}^3$  (i.e., values ending in 5 or greater are to be rounded up).

An **exceptional event** is an uncontrollable event caused by natural sources of particulate matter or an event that is not expected to recur at a given location. Inclusion of such a value in the computation of exceedances or averages could result in inappropriate estimates of their respective expected annual values.

An **outlier** is a data point on a graph or in a set of results that is very much bigger or smaller than the next nearest data point. For example, outliers among monitoring data can be due to instrument malfunctions, the influence of harsh environments, and the limitation of measuring methods.

## II. Executive Summary

This report summarizes the Particulate Matter (PM) readings for ESCR Project Area 2 (PA), collected by Distinct Environmental Group, environmental subconsultant to the PA2 contractor, Perfetto Contracting Corporation (PCC), from January through June 2021. Through this period, construction activities occurred in the area along Avenue C, north to Asser Levy Playground (ALP) at E 25<sup>th</sup> Street, and south to E 20<sup>th</sup> Street within Stuyvesant Cove Park adjacent to the Solar One (SO) Building. The PA2 contract requires a minimum of four (4) air quality monitoring stations throughout construction, which will be relocated as necessary to reflect the phased construction activities.

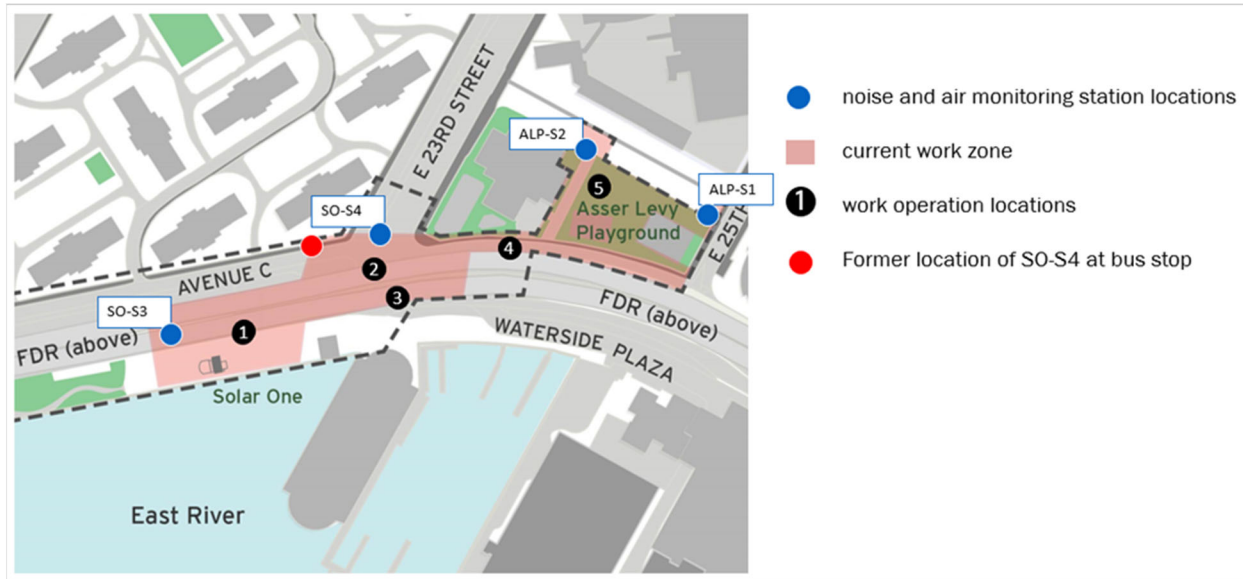


Fig.3 East Side Coastal Resiliency Project Area 2 Phase 1 Air Quality Monitoring Station Locations

In January 2021, four stations were set up within the PA2 active construction zone (Fig 6). **ALP-S1** and **ALP-S2** monitoring stations were installed in **Asser Levy Playground (ALP)** on January 8, 2021. **SO-S3** and **SO-S4** monitoring stations were installed around the **Solar One (SO)** construction site on January 11, 2021. On March 25, the SO-S4 monitoring station was relocated because its proximity to idling buses at the M9 and M23 bus stop caused the monitors to show unusually high readings of particulate matter in the months prior. This was considered an exceptional event, meaning an event not expected to occur at that location based on the construction activities taking place.

### Work Activities during this period included:

- **Area 1: North Stuyvesant Cove Park at Solar One (Daytime work)**
  - Starting in January 2021, work in this area included test pits and utility relocations. In February, there was preparation work for the floodwall, and the contractors began installation of piles for the floodwall in April. This work continued through June.
- **Area 2: FDR Dr. West Service Rd. between E23rd & E25th St. (Nighttime work)**
  - After the test pits in January, work in this area focused on utility relocation and the installation of new utilities.
- **Area 3: E23rd St. under the FDR Dr. (Daytime work)**
  - Starting in January 2021, work in this area included test pits and site preparation. In February, there were utility relocations, and the contractors began installation of piles for the floodwall in April. This work continued through June.
- **Area 4: FDR Dr. East Service Rd. at E 23<sup>rd</sup> St. (Daytime work)**
  - Between February and June 2021, work in this area focused on utility relocation.

- **Area 5: Asser Levy Playground (Daytime work)**
  - Starting in January 2021, work in this area included test pits and utility relocations. In February, there were site removals, and the contractors began installation of piles for the floodwall in April. This work, as well as the installation of utilities, continued through June.

Though air quality is monitored 24/7, typical work hours during the period of this report are 7:00 am – 3:30 pm (Daytime) and 9:30 pm – 5:00 am (Nighttime).

### Summary of Air Quality Monitoring Reports:

For the months of January 2021 – June 2021, construction-related levels of Particulate Matter (PM) at both net PM 2.5 and PM 10 levels did not surpass Daily Permissible Exposure Limits (PEL) as set by federal standards for the 24-hour TWA, or daily value, and did not cause air quality concerns to the public or on-site workers. The contractor, PCC, in conjunction with the contractor's environmental specialist, has successfully implemented mitigation techniques at both Action Levels as well as Permissible Exposure Limits (15-minute TWA) to suppress construction activity effects on air quality at Asser Levy Playground and Solar One.

#### January 2021:

- There were increased levels of PM 2.5  $\mu\text{g}/\text{m}^3$  recorded at Solar One on January 19-20, 2021, between the hours of 10:54 pm and 1:05am, outside of the daytime working hours. This was a result of the SO-S4 air monitoring station being located in close proximity of a bus stop, adjacent to idling buses.

#### February 2021:

- The Net PM 2.5  $\mu\text{g}/\text{m}^3$  surpassed the PEL (15-minute TWA) at Solar One from February 23-26, 2021 as a result of the SO-S4 air monitoring station being located in close proximity of a bus stop and plow idling location. The majority of the increased levels were recorded overnight, outside of the daytime working hours in this location.

#### March 2021:

- The Net PM 2.5  $\mu\text{g}/\text{m}^3$  surpassed the PEL (15-minute TWA) at Solar One on March 11-12, 2021, a result of the SO-S4 air monitoring station being located in close proximity of a bus stop. No major construction activities were occurring at this time to justify the high readings at this location. This occurrence was considered an exceptional event and the SO-04 monitor was relocated after March 12<sup>th</sup> to avoid the unusually high and inaccurate readings recorded prior to and on that date.

#### April 2021

- High PM 10 values were recorded at Asser Levy Playground on 4/16/21 outside of the construction shift and therefore determined as not caused by construction activities.
- High PM 2.5 values were recorded at Asser Levy Playground on three occasions, however the Net PM only surpassed the PEL (15-minute TWA) on one occasion, for 21 minutes.

#### May 2021

- High PM 2.5 levels were recorded at Asser Levy Playground on three, 15-minute occurrences (5/4/21, 5/21/21, and 5/26/21) and quickly mitigated. The Net PM level did not surpass the PEL.

#### June 2021

- PM 2.5 levels slightly over the PEL were recorded at Asser Levy Playground for one 15-minute duration on 6/5/21, however the Net PM did not surpass the PEL. This was a non-working day for the project and so the values recorded were not due to construction activity.
- High PM 2.5 levels were recorded at Solar One on 6/4/21 and 6/8/21 for brief durations (17 and 15 minutes, respectively). The Net PM surpassed the PEL (15-minute TWA) on 6/4/21 only, however this occurrence was after work hours, so the values recorded were not due to construction activity.

## PART 2

## Summary of Data January 2021:

There were no occasions where readings were above the PM 10 Permissible Exposure Limit at Solar One or Asser Levy Playground in the month of January.

There was one occasion that showed levels above the PM 2.5 Permissible Exposure Limit (15-minute TWA) at Solar One during the month of January.

For the month of January 2021, construction-related Particulate Matter (PM) net 2.5 or 10 levels did not surpass Daily Permissible Exposure Limits (PEL) (24-hour time weighted average).

### PM 10 µg/m<sup>3</sup>

- **Asser Levy Playground (ALP):** PM 10 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).
- **Solar One (SO):** PM 10 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).

### PM 2.5 µg/m<sup>3</sup>

- **Asser Levy Playground (ALP):** PM 2.5 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).
- **Solar One (SO):** There were increased levels of PM 2.5 µg/m<sup>3</sup> recorded on January 19-20, 2021, between the hours of 10:54 pm and 1:05am, outside of the daytime working hours in this location. This was a result of the SO-S4 air monitoring station being located in close proximity of the bus stop adjacent to idling buses.

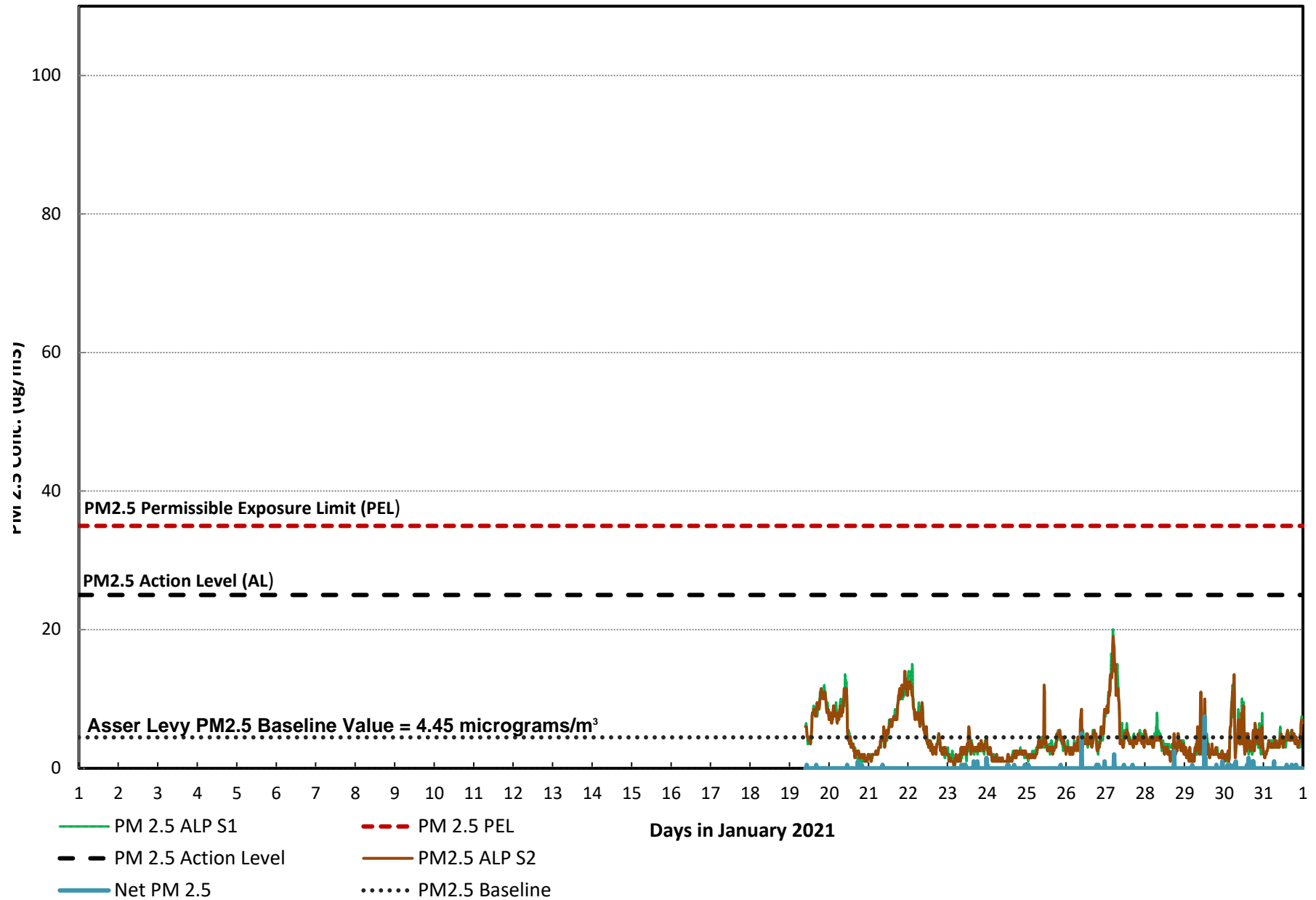
### Mitigation Measures:

- No mitigation measures were taken, as the impact was outside of daytime working hours. (The SO-04 monitor was ultimately relocated in March 2021, due to proximity to the bus stop.)

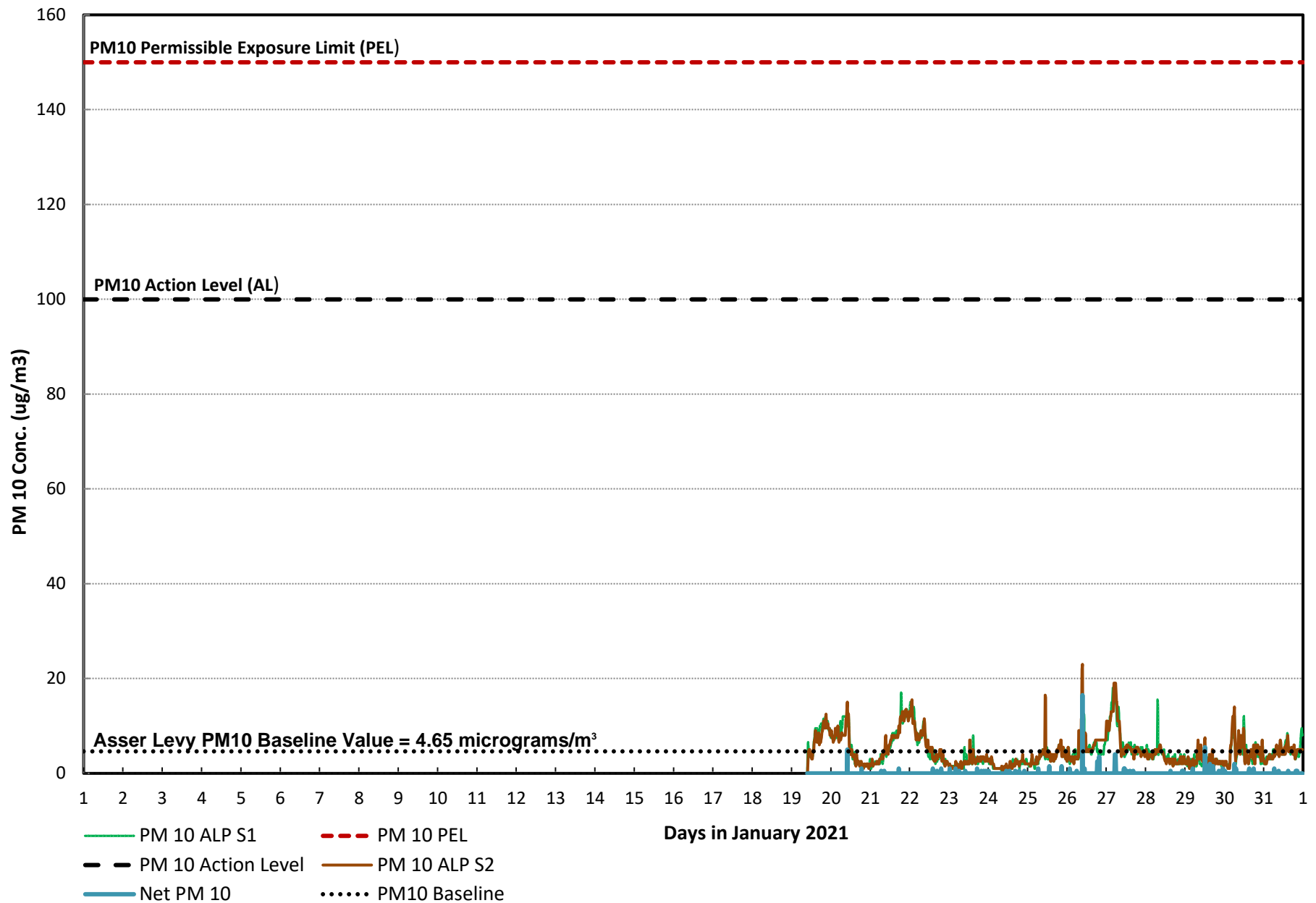
# JANUARY 2021 DATA PLOTS



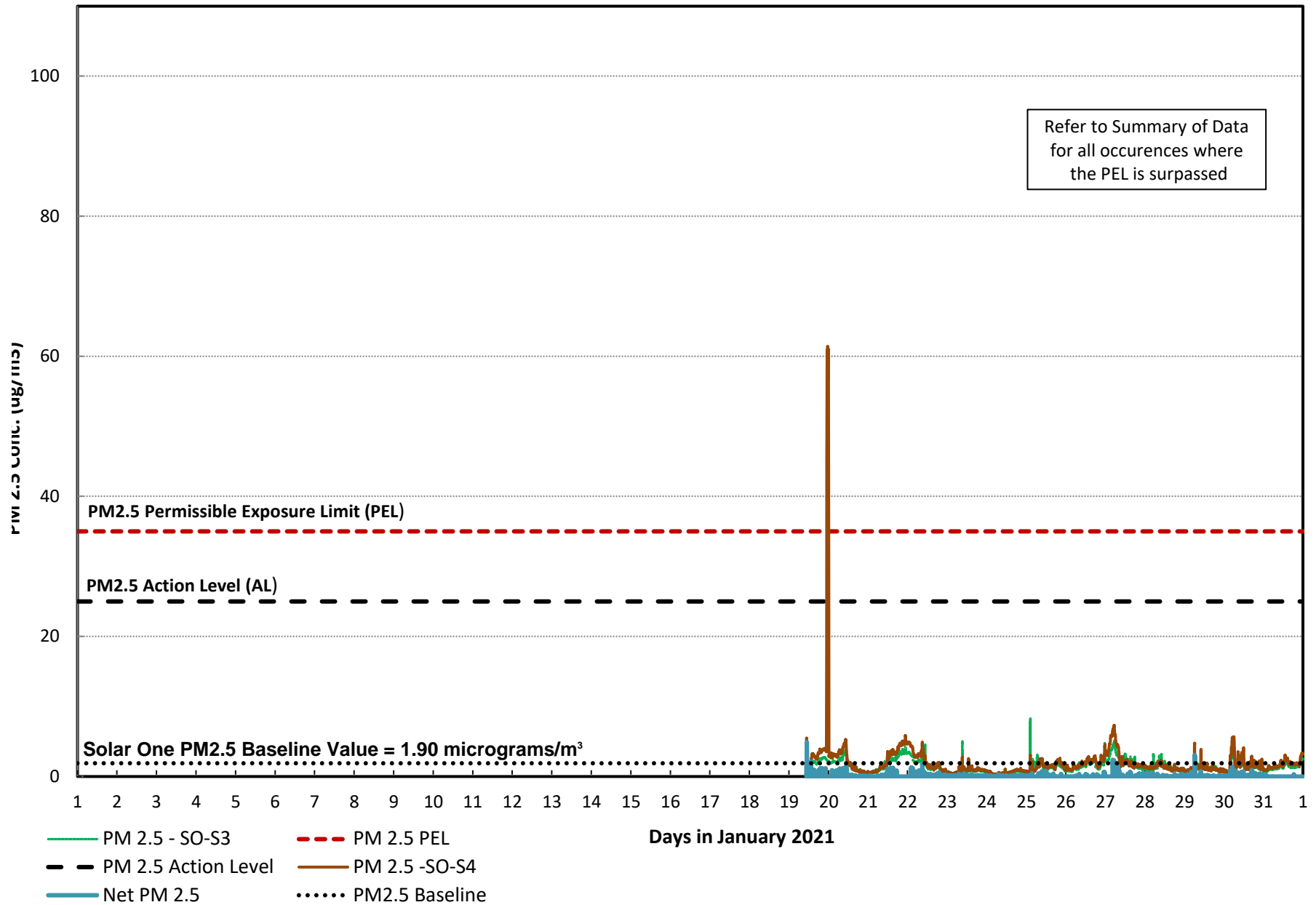
January 2021, 15-Minute Running Average Air Quality Data  
PM 2.5  $\mu\text{g}/\text{m}^3$  Plot at Asser Levy



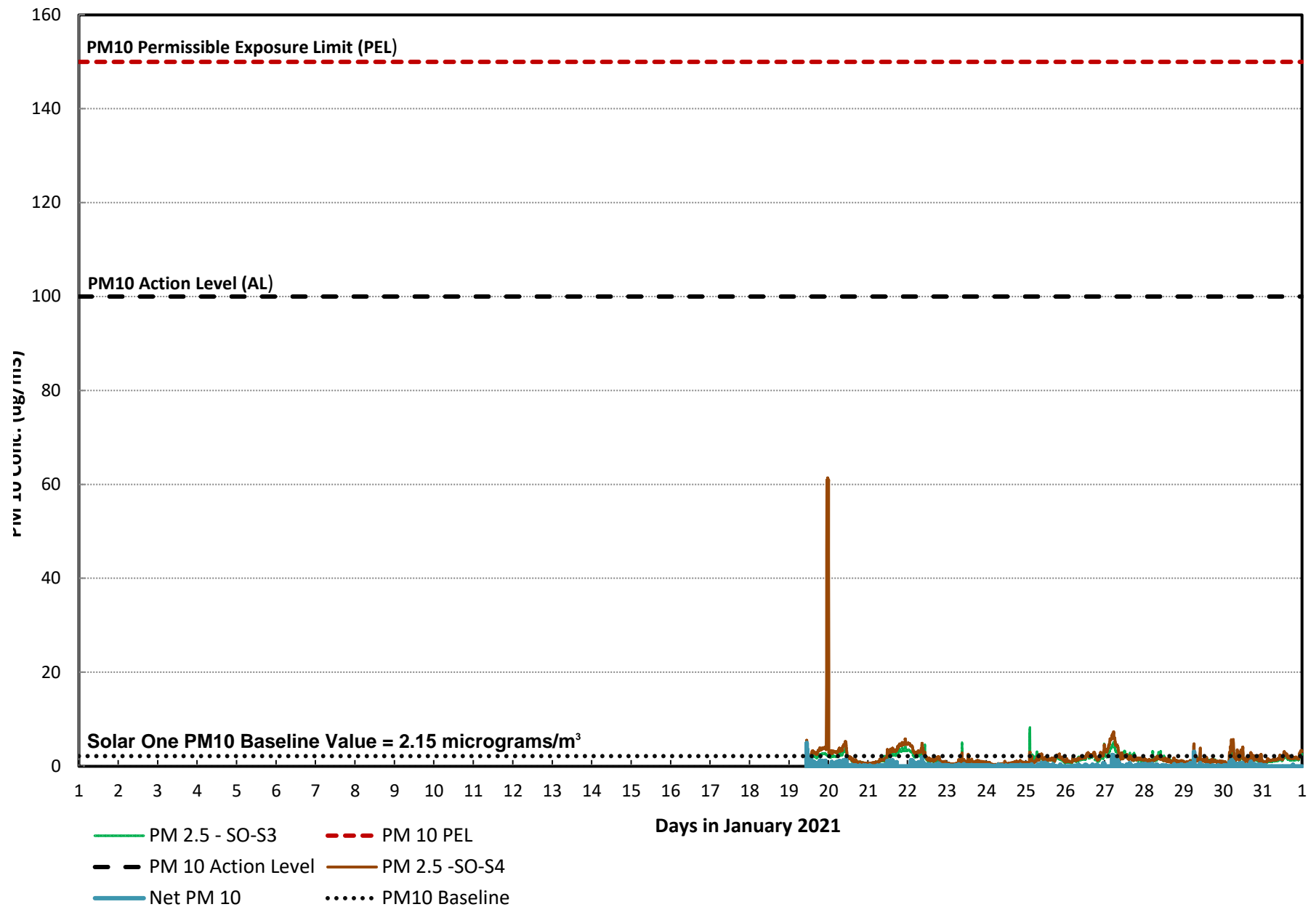
January 2021, 15-Minute Running Average Air Quality Data  
PM 10  $\mu\text{g}/\text{m}^3$  Plot at Asser Levy



# January 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Solar One



# January 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Solar One



## Summary of Data February 2021:

There were no PM 10 readings recorded above the Permissible Exposure Limit at Solar One or Asser Levy Playground during the month of February.

There were a series of days where the PM 2.5 readings at Solar One were above the Action Level and Permissible Exposure Limit for the month of February. PM 2.5 levels remained under the Permissible Exposure Limit at Asser Levy Playground.

An outlier condition occurred during the monitoring period of 02/07/21 to 02/13/21. On these occasions, idling buses caused the sensor to trip and created a gap in the readings.

### PM 10 $\mu\text{g}/\text{m}^3$

- **Asser Levy Playground (ALP):** PM 10  $\mu\text{g}/\text{m}^3$  levels remained under the Permissible Exposure Limit (PEL).
- **Solar One (SO):** PM 10  $\mu\text{g}/\text{m}^3$  levels remained under the Permissible Exposure Limit (PEL).

### PM 2.5 $\mu\text{g}/\text{m}^3$

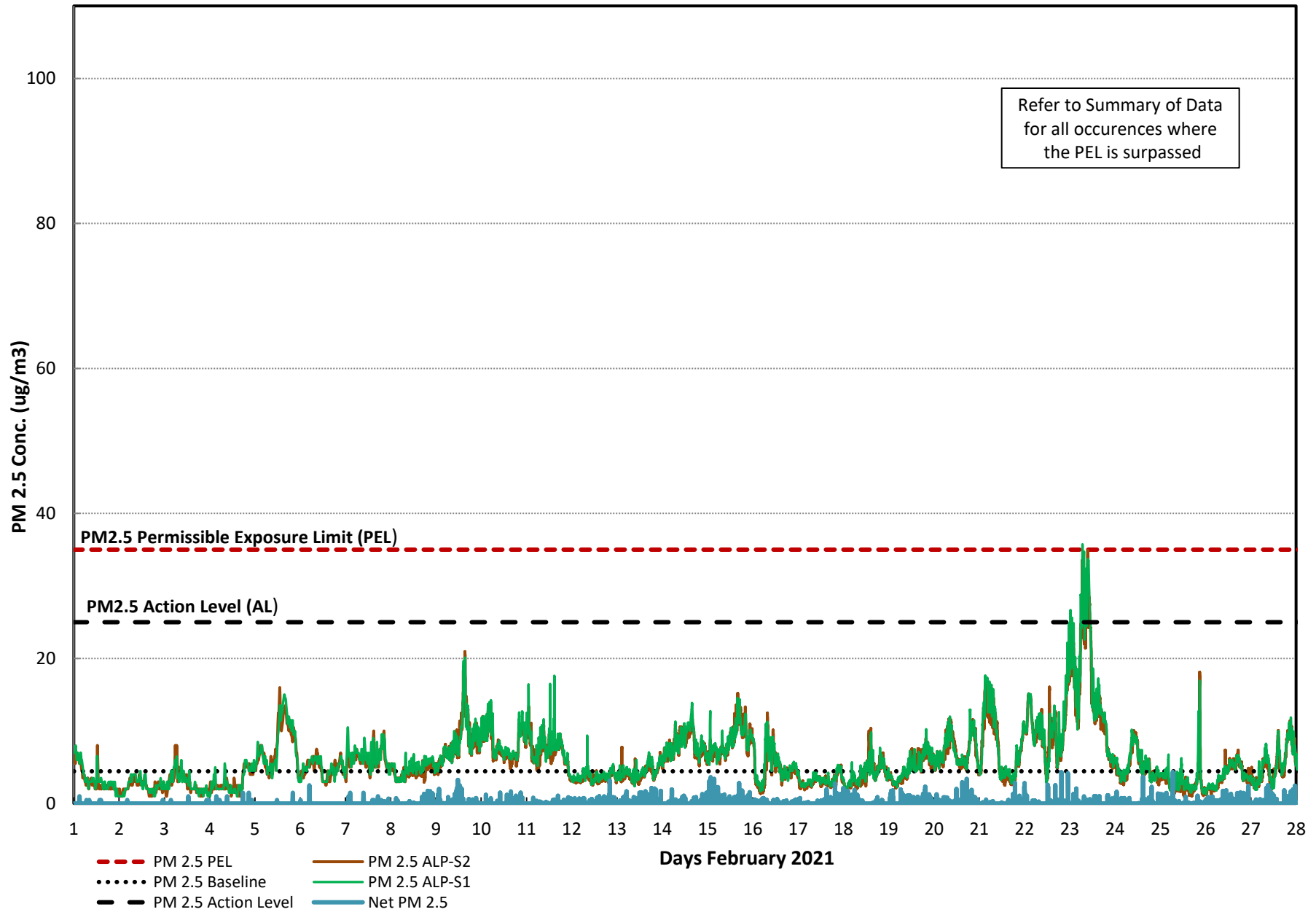
- **Asser Levy Playground (ALP):** PM 2.5  $\mu\text{g}/\text{m}^3$  levels remained under the Permissible Exposure Limit (PEL).
- **Solar One (SO):** The Net PM 2.5  $\mu\text{g}/\text{m}^3$  levels surpassed the PEL from 2/23/21 to 2/26/21 as a result of the SO-S4 air monitoring station being located in close proximity of the bus stop and plow idling location. The majority of the increased levels were recorded overnight, outside of the daytime working hours in this location.

### Mitigation Measure:

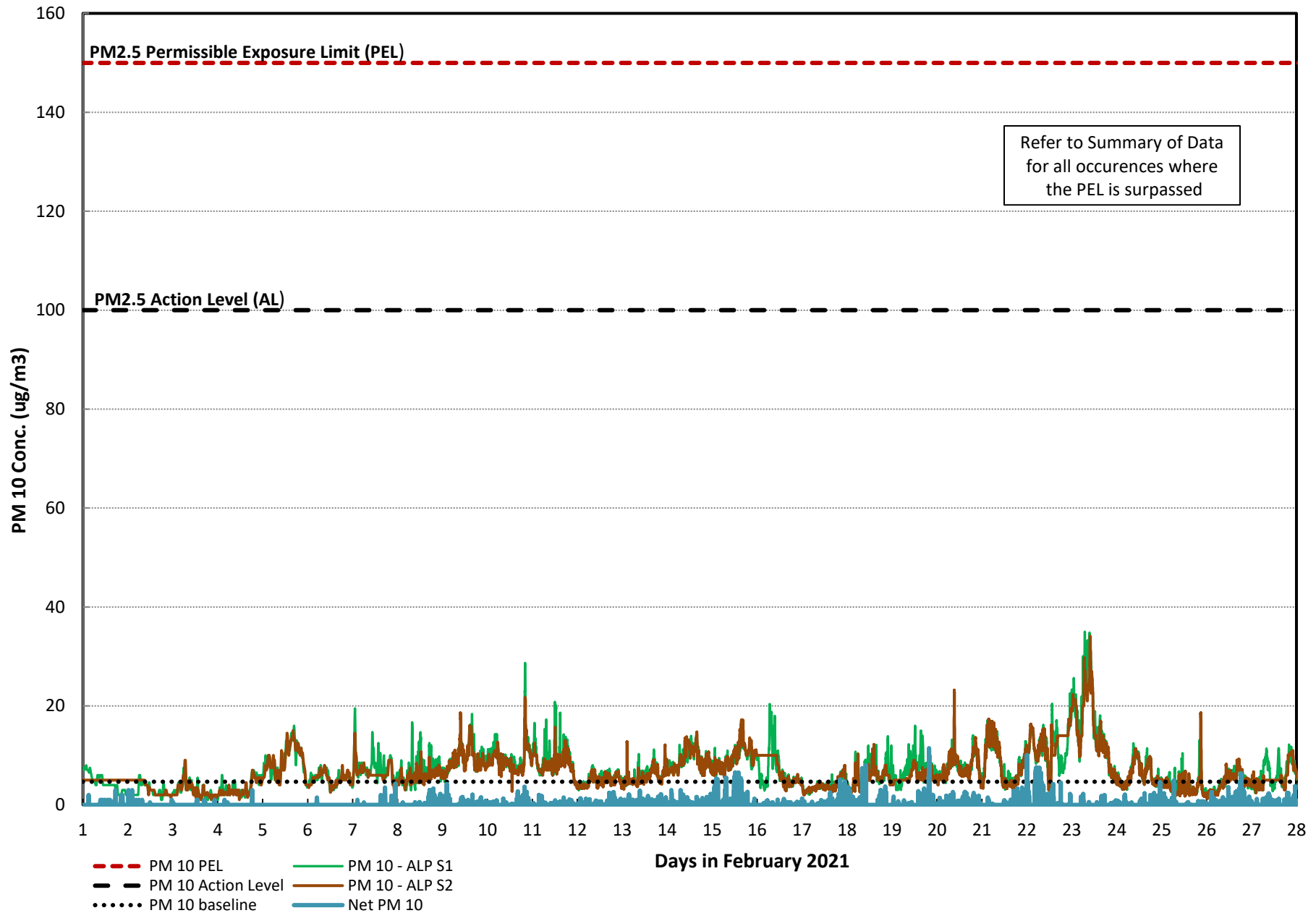
- The levels at Solar One (SO) were monitored, and due to the consistent increased readings towards the end of the month, it was determined to move the monitor from the location at the bus stop to the intersection of E 23<sup>rd</sup> St. and Avenue C away from the active bus stop. PCC also determined that the monitor was faulty and required replacement. This replacement and relocation of the monitor occurred in the month of March. This occurrence was considered an exceptional event.

# FEBRUARY 2021 DATA PLOTS

February 2021, 15-Minute Running Average Air Quality Data  
PM 2.5  $\mu\text{g}/\text{m}^3$  Plot at Asser Levy

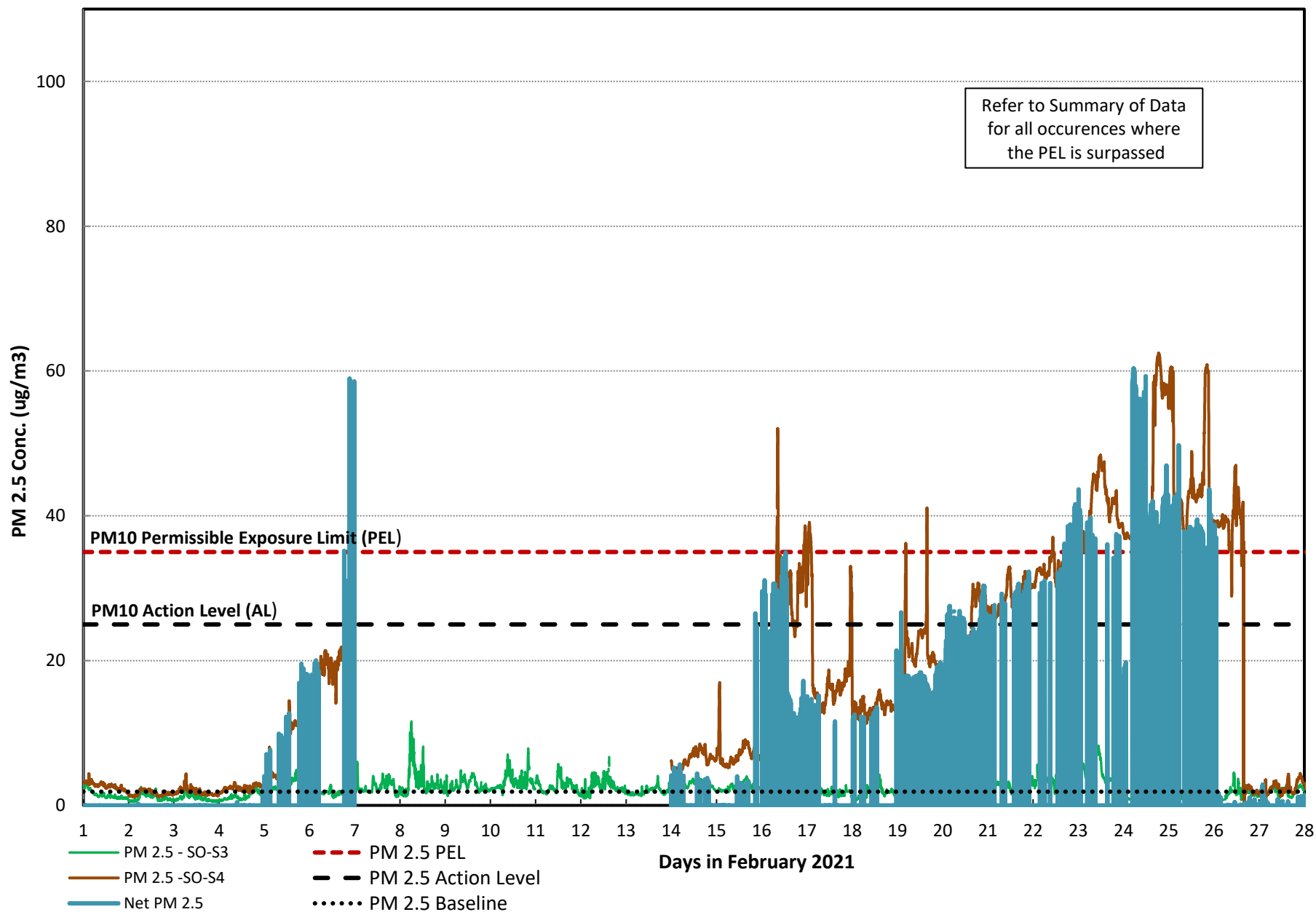


# February 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy

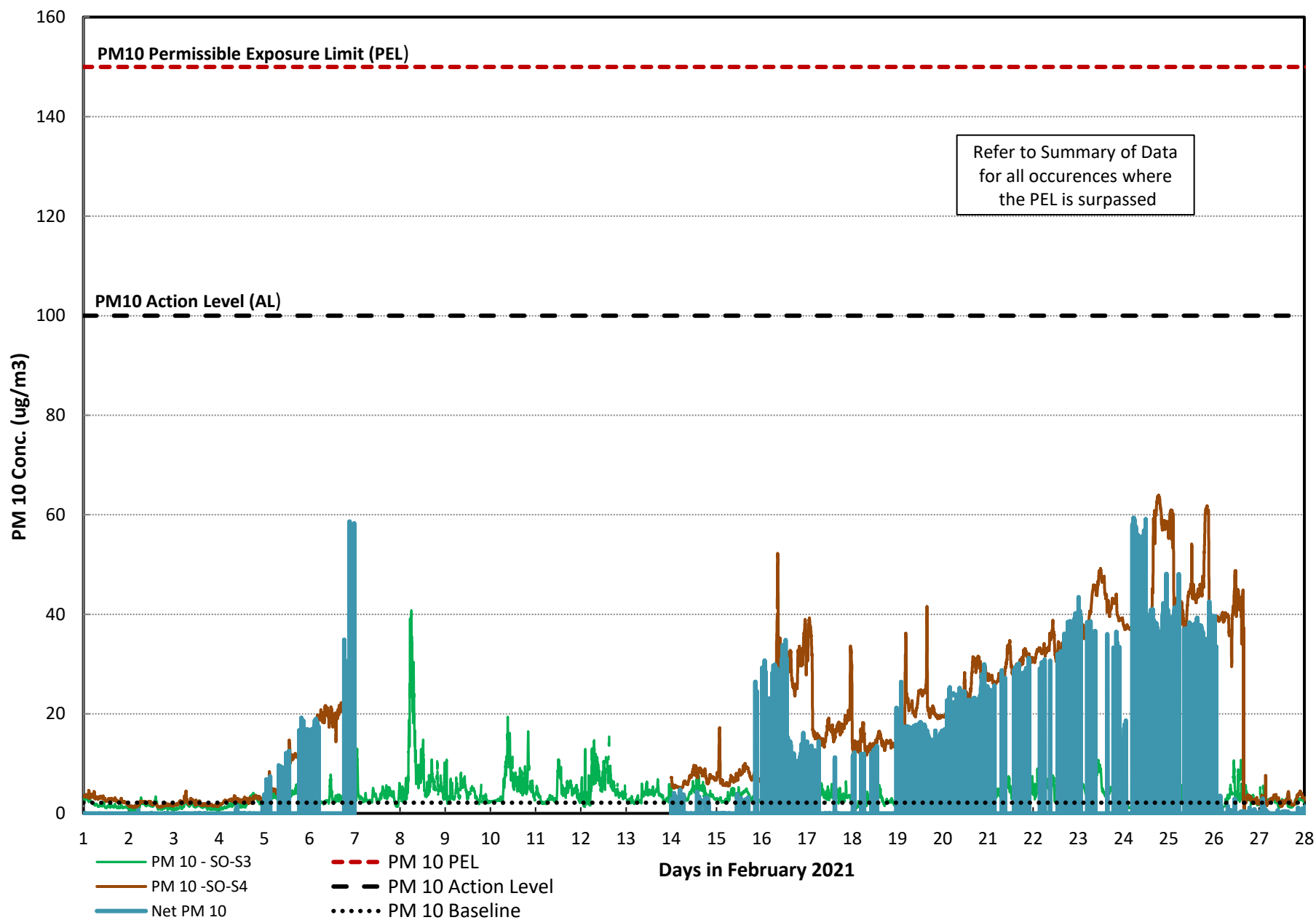




# February 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Solar One



# February 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Solar One



## Summary of Data March 2021:

There were no PM 10 readings recorded above the Permissible Exposure Limit (PEL) at Solar One and Asser Levy Playground in the month of March.

PM 2.5 levels surpassed the Permissible Exposure Level (PEL) for the 15-minute TWA at Solar One on 3/11 and 3/12. PM 2.5 levels remained under the PEL at Asser Levy Playground for the month of March.

For the month of March 2021, construction-related Particulate Matter (PM) net 2.5 or 10 levels did not surpass Daily Permissible Exposure Limits (PEL) (24-hour time weighted average).

### PM 10 µg/m<sup>3</sup>

- **Asser Levy Playground (ALP):** PM 10 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).
- **Solar One (SO):** PM 10 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).

### PM 2.5 µg/m<sup>3</sup>

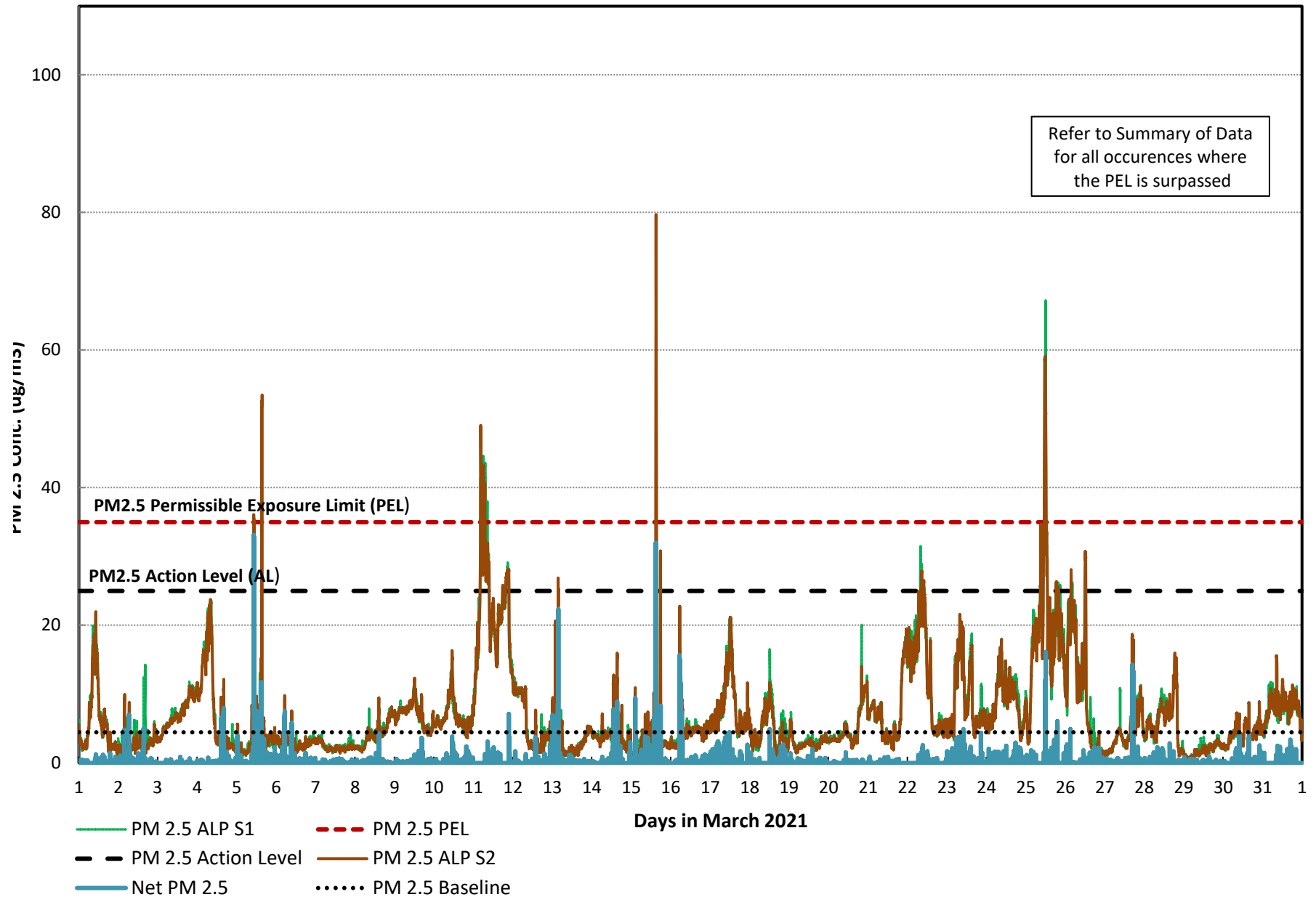
- **Asser Levy Playground (ALP):** PM 2.5 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).
- **Solar One (SO):** The Net PM 2.5 µg/m<sup>3</sup> surpassed the PEL on 3/11 and 3/12 as a result of the SO-S4 air monitoring station being located in close proximity of the bus stop. The data for the SO-S4 monitor between 3/12/21 and 3/24/21 is invalid as the monitor was being uninstalled, relocated, and replaced during those days. No major construction activities were occurring at this time to justify the high readings at this location. This occurrence was considered an exceptional event.

### Mitigation Measure:

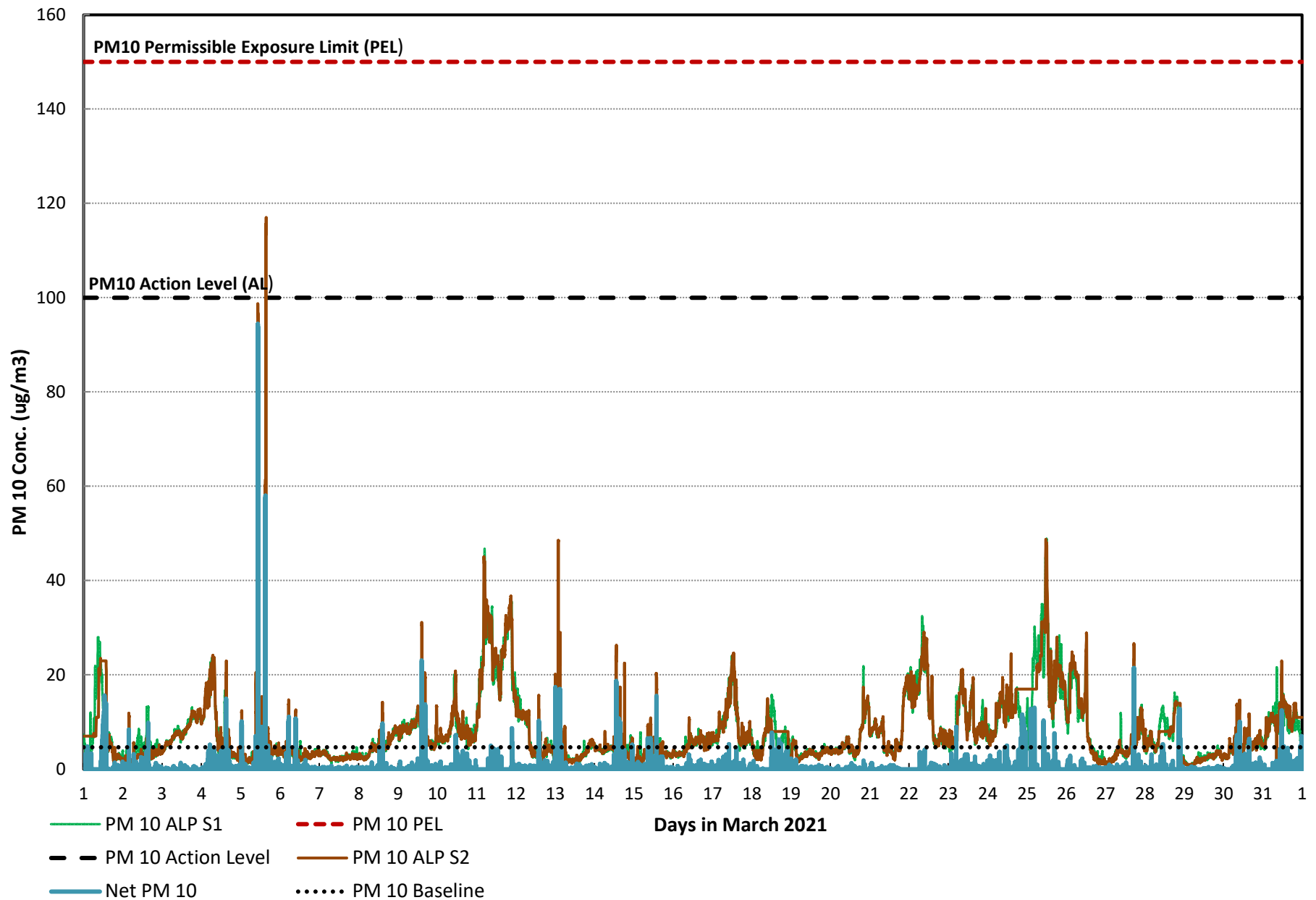
- As mentioned, the situation was monitored and due to the consistent increased readings, it was determined to move the monitor to the intersection of E 23<sup>rd</sup> St. and Ave. C, away from the active bus stop. Perfetto also determined that the monitor was faulty and required replacement.

# MARCH 2021 DATA PLOTS

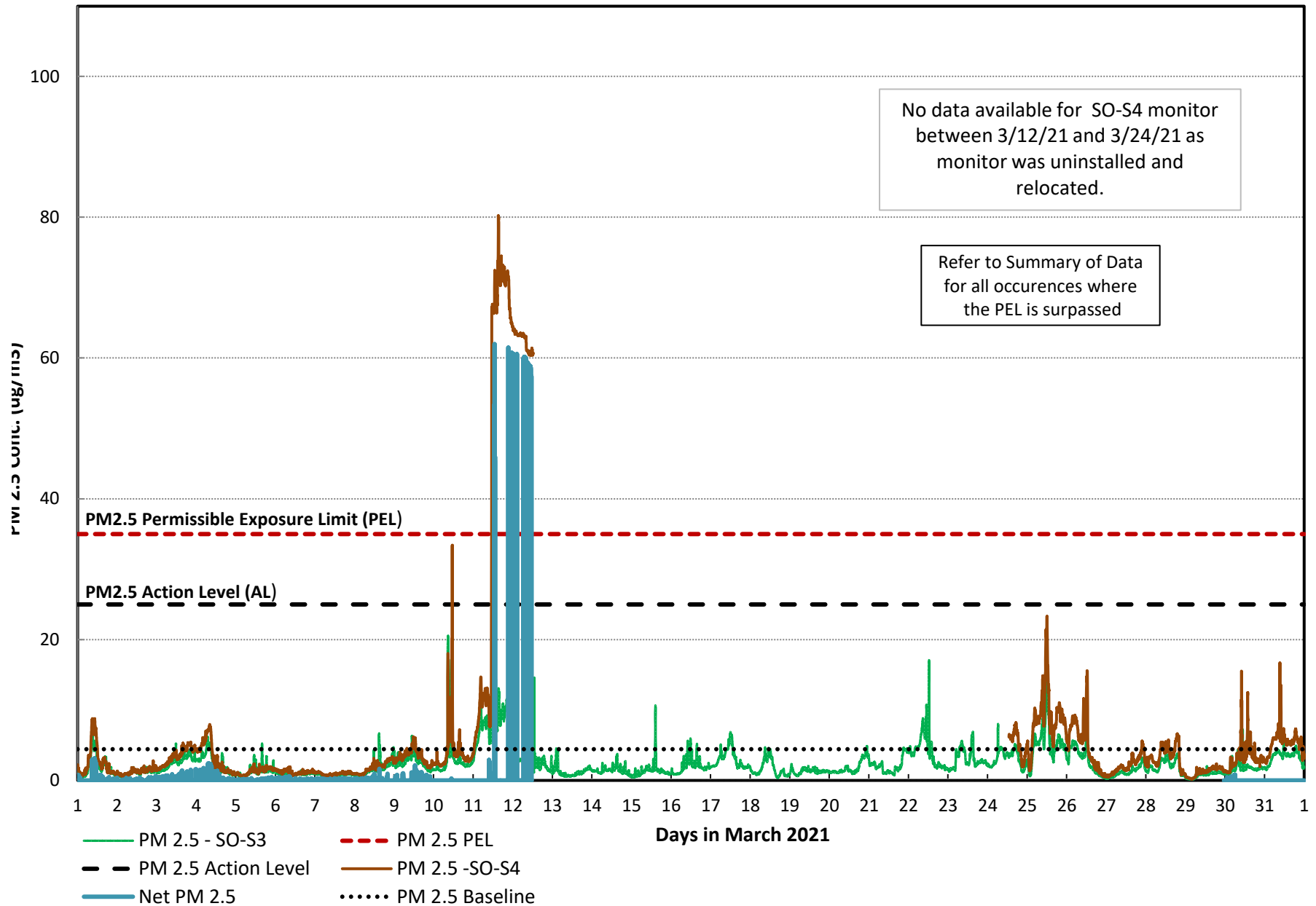
# March 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy



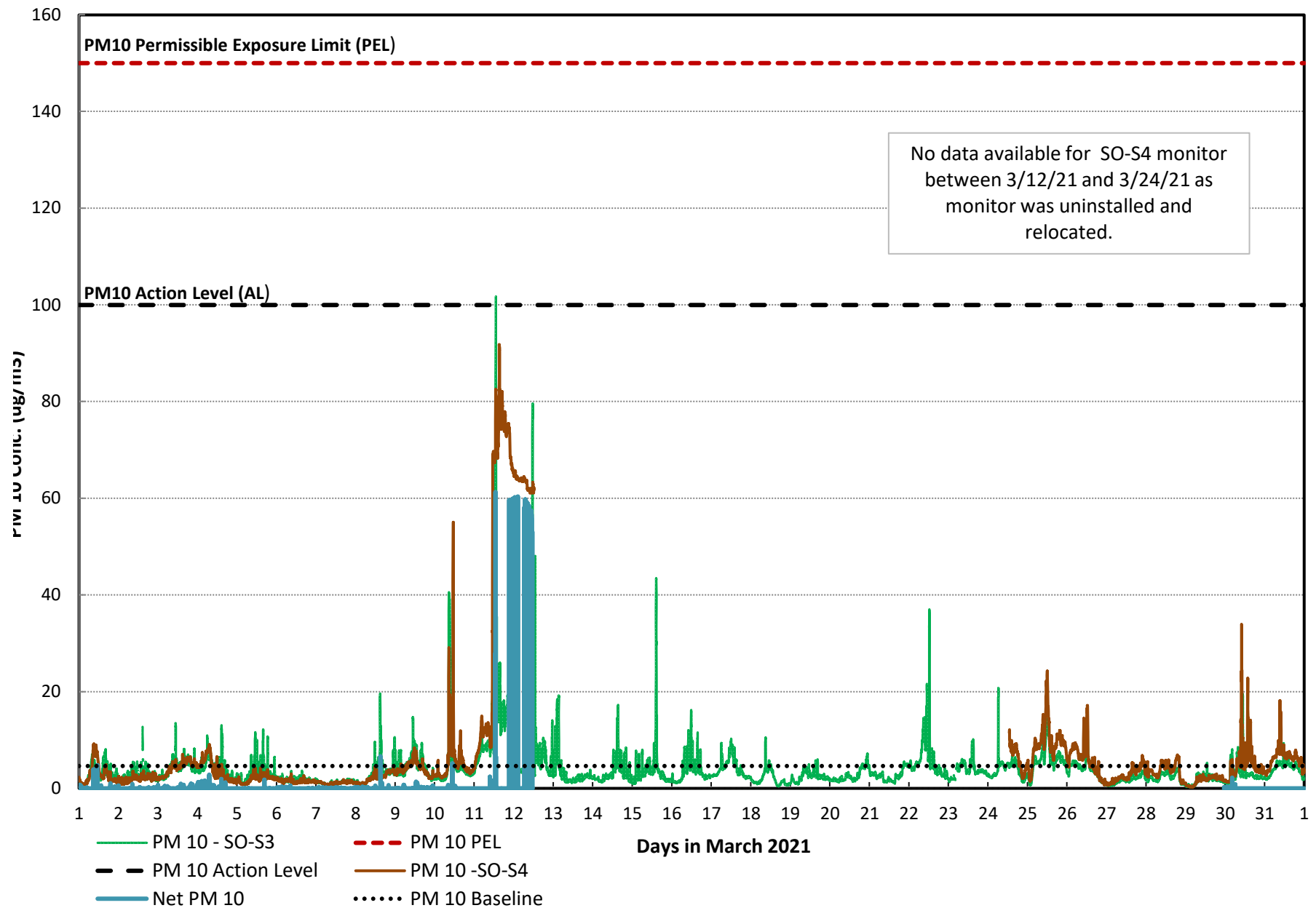
# March 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy



# March 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Solar One



# March 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Solar One





## Summary of Data April 2021:

PM 10 levels surpassed the Permissible Exposure Level for a short duration on one occasion at Asser Levy Playground and one occasion at Solar One during the month of April.

There were three days where the PM 2.5 readings were above the Action Level and Permissible Exposure Limit (15-minute TWA) at Asser Levy Playground location. PM 2.5 levels remained below the PEL at Solar One for the month of April.

For the month of April 2021, construction related Particulate Matter (PM) net 2.5 or 10 levels did not surpass Daily Permissible Exposure Limits (PEL) (24-hour time weighted average).

### **PM 10 µg/m3**

- **Asser Levy Playground (ALP):** The Net PM 10 µg/m3 values surpassed the PEL (15-minute TWA) on 4/15/21 for a 30 minute duration.
- **Solar One (SO):** High PM 10 µg/m3 levels were recorded on 4/7/21 for a 15-minute duration. The levels were determined to be caused by a (non-construction related) vehicle idling near the SO-03 location on Avenue C southbound.

### **PM 2.5 µg/m3**

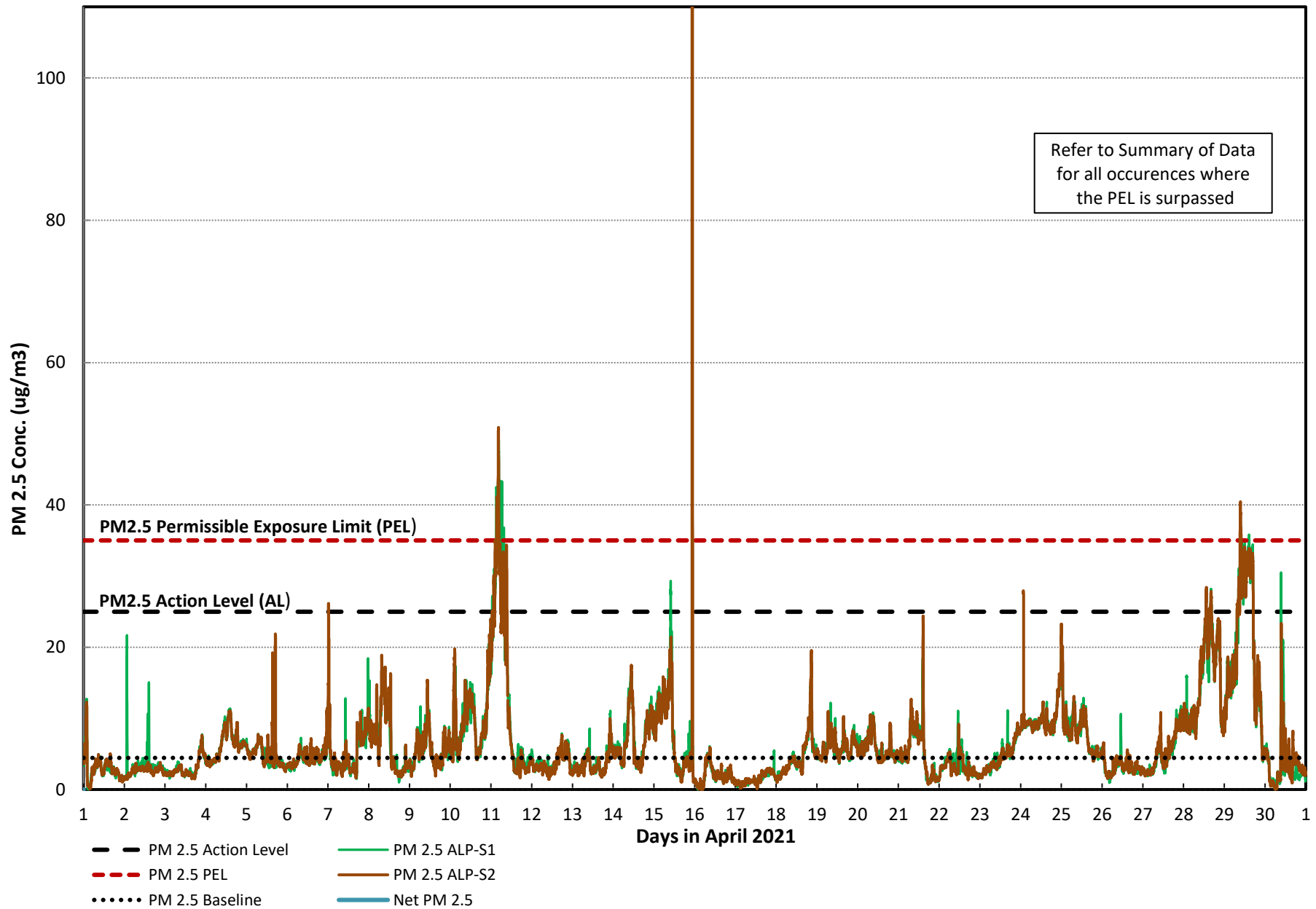
- **Asser Levy Playground (ALP):** High PM 2.5 levels were recorded on three occurrences:
  1. High PM 2.5 µg/m3 levels were recorded on Sunday 4/11/21, from 2:30am to 7:30am. PCC was neither on site nor performing any work during this time, so exceedances are not attributed to PCC construction activities. Values recorded were slightly above the PEL and the downwind station was undetermined for the majority of the values - this means that wind speeds at one or both monitors was less than 0.5 meters per second resulting in the highly unlikely case that any airborne particulates might migrate off-site.
  2. The Net PM 2.5 µg/m3 levels briefly surpassed the PEL on Thursday 4/15/21, from 10:25pm to 10:46pm. This short-term exceedance was at the Air Quality Monitor located in the park adjacent to the Asser Levy Recreation Center. Night shift work was occurring at this time at the West Service Road and this short-term spike is attributed to construction equipment (loader) idling adjacent to this monitor causing a very high reading.
  3. High PM 2.5 µg/m3 levels were recorded on Thursday 4/29/21. PM 2.5 values were measured at close to (and slightly above) the PEL for both monitors in the morning and in the afternoon. PCC monitored conditions upon receipt of the first alert. Downwind station was undetermined for the majority of these values meaning the wind speed for one or both monitors was less than 0.5 meters per second indicating that any airborne particulates have a very low likelihood of migrating off site and the Net PM value did not surpass the PEL. These values recorded are attributed to sheet pile operations that day - major obstructions were encountered that morning and were excavated until early afternoon which are suspected to be the cause of the local spike in PM 2.5 values.
- **Solar One (SO):** PM 2.5 µg/m3 levels remained under the Permissible Exposure Limit (PEL).

**Mitigation Measures:**

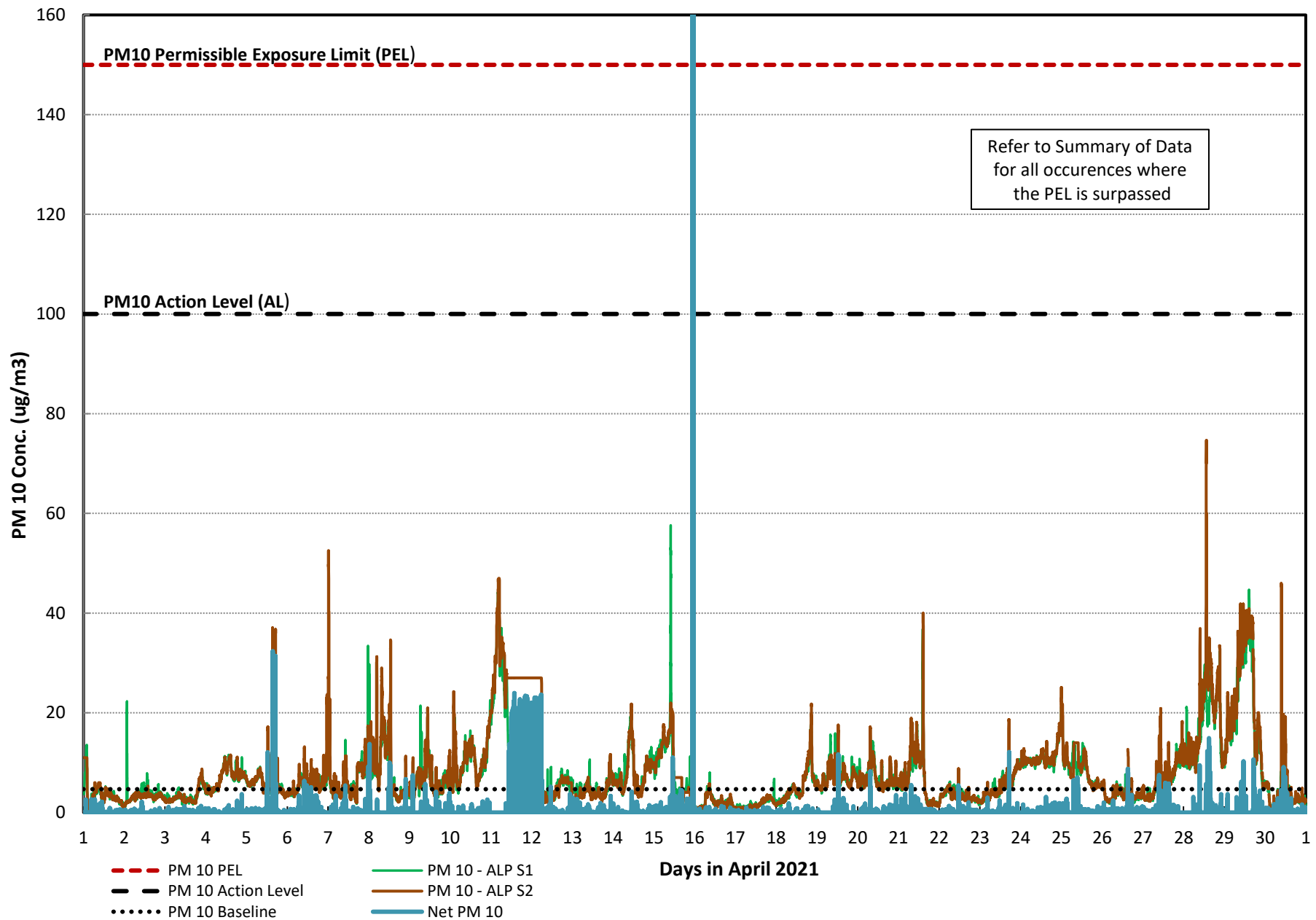
- No mitigation actions were needed for the first two items. For number 3, PCC monitored conditions upon receipt of the first alert and implemented dust mitigation activities (spraying/wet misting). There are no public or worker air quality concerns and the 24-hour Time Weighted Average (TWA) was not in exceedance.

# APRIL 2021 DATA PLOTS

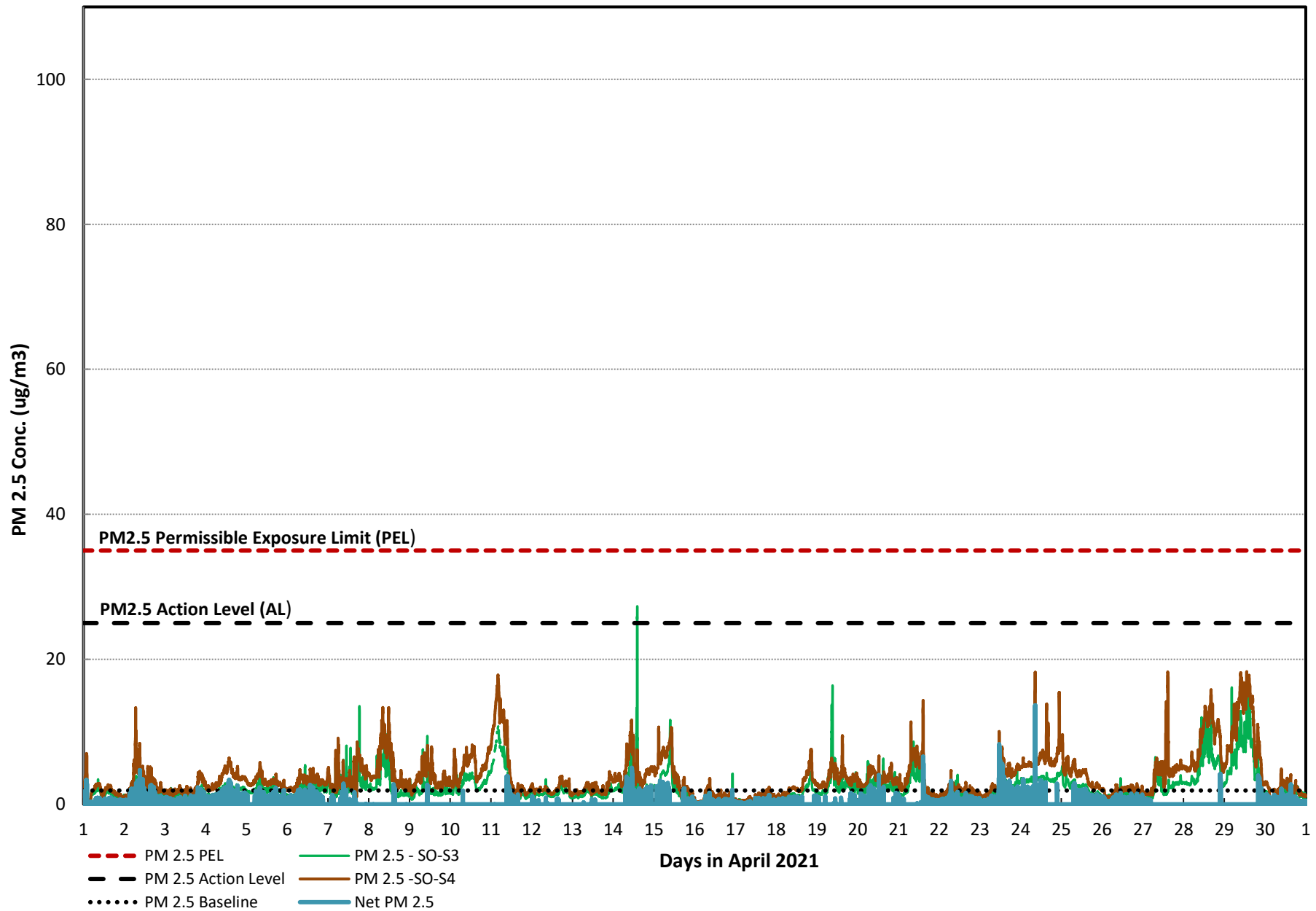
# April 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy



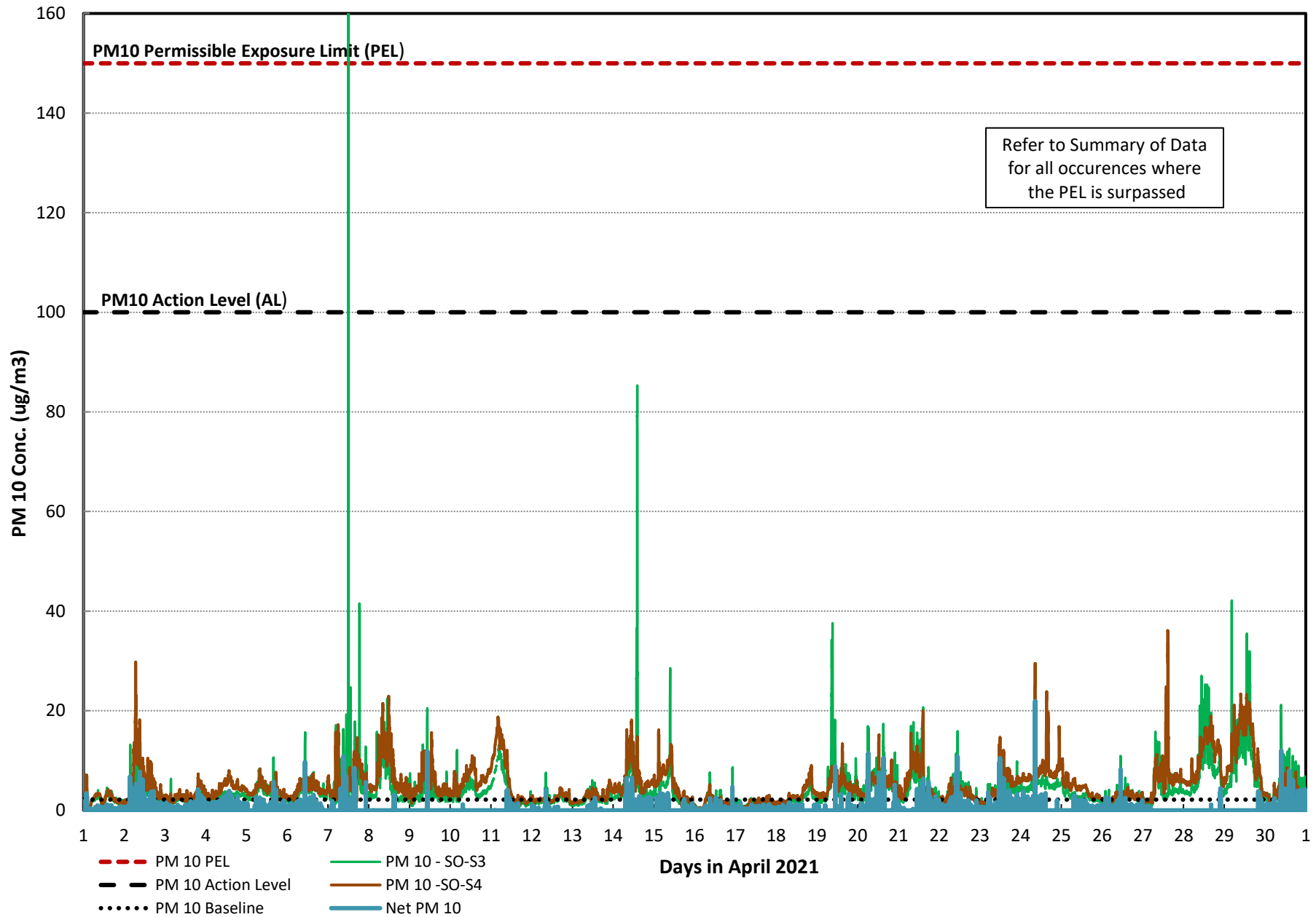
# April 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy



April 2021, 15-Minute Running Average Air Quality Data  
PM 2.5  $\mu\text{g}/\text{m}^3$  Plot at Solar One



# April 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Solar One



## Summary of Data May 2021:

There were no PM 10 readings recorded above the Permissible Exposure Limit (PEL) at Solar One and Asser Levy Playground in the month of May.

On three occasions, the PM 2.5 readings at Asser Levy Playground were above the Action Level and Permissible Exposure Limit (15-minute TWA) at Asser Levy Playground for the month of May. The PM 2.5 readings were below the Permissible Exposure Limit at Solar One.

For the month of May 2021, construction related Particulate Matter (PM) net 2.5 or 10 levels did not surpass Daily Permissible Exposure Limits (PEL) (24-hour time weighted average).

### **PM 10 µg/m3**

- **Asser Levy Playground (ALP):** PM 10 µg/m3 levels remained under the Permissible Exposure Limit (PEL).
- **Solar One (SO):** PM 10 µg/m3 levels remained under the Permissible Exposure Limit (PEL).

### **PM 2.5 µg/m3**

- **Asser Levy Playground (ALP):** High PM 2.5 levels were recorded for three, ~ 15-minute occurrences and quickly mitigated. On no day did the Net PM levels surpass the PEL.
  1. On 5/4/21, PM levels increased for a 16-minute duration due to water main excavation activities at Asser Levy Playground.
  2. On 5/21/21, construction vehicles idling in close proximity to the monitoring stations caused a spike in PM levels for a 14-minute duration.
  3. On 5/26/21, construction operations in the park consisting of screening excavated material (separating large construction debris from excavated soil) caused a brief increase in PM levels (12-minute duration).
- **Solar One (SO):** PM 2.5 µg/m3 levels remained under the Permissible Exposure Limit (PEL).

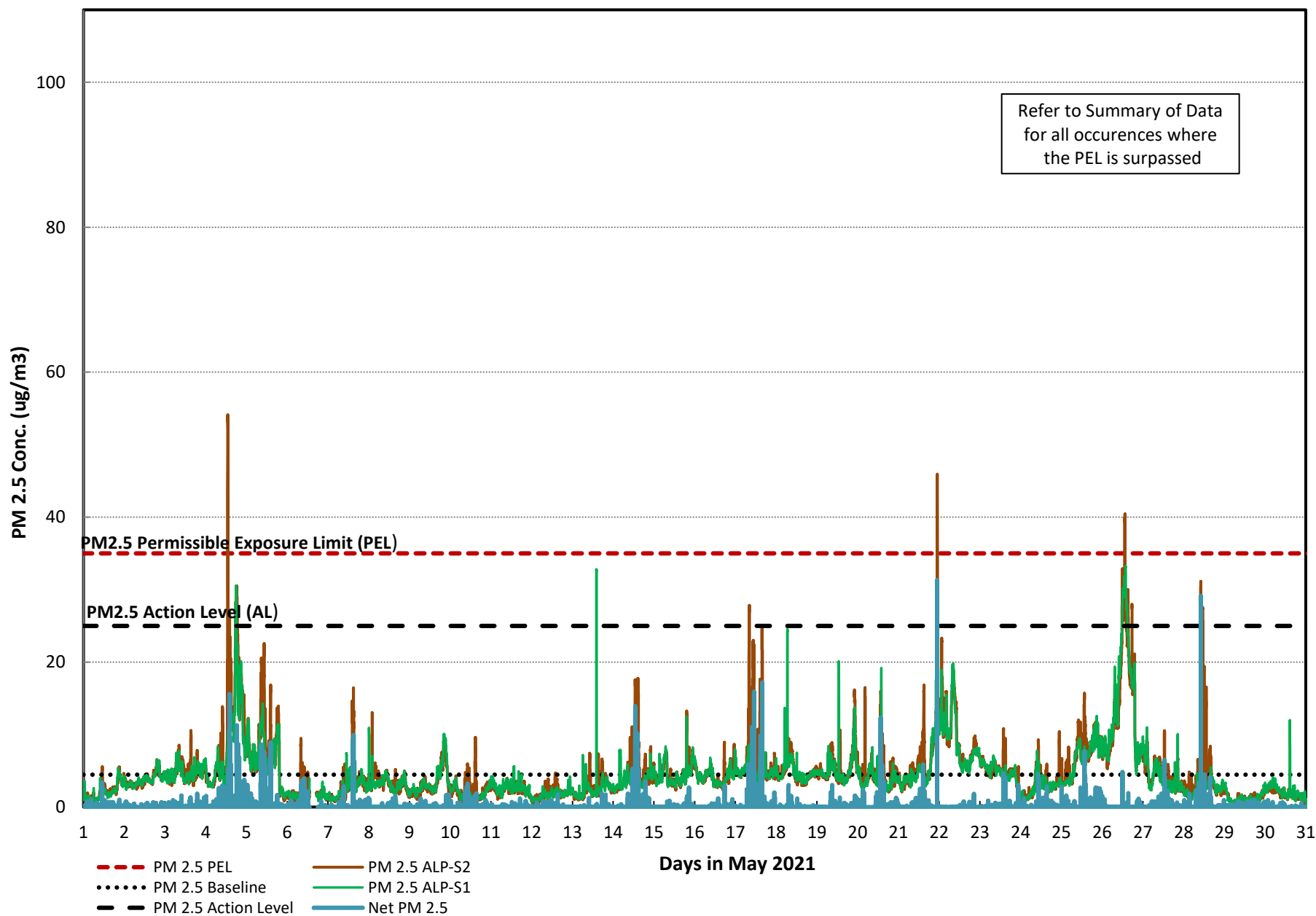
### **Mitigation Measures:**

- For items 1 and 3 mentioned above PCC monitored conditions upon receipt of the first alert and implemented dust mitigation activities (spraying/wet misting). There are no public or worker air quality concerns and the 24-hour Time Weighted Average (TWA) or Daily Value was not in exceedance.
- For item 2, the contractor has been instructed to minimize idling time of trucks to cut down exhaustion.

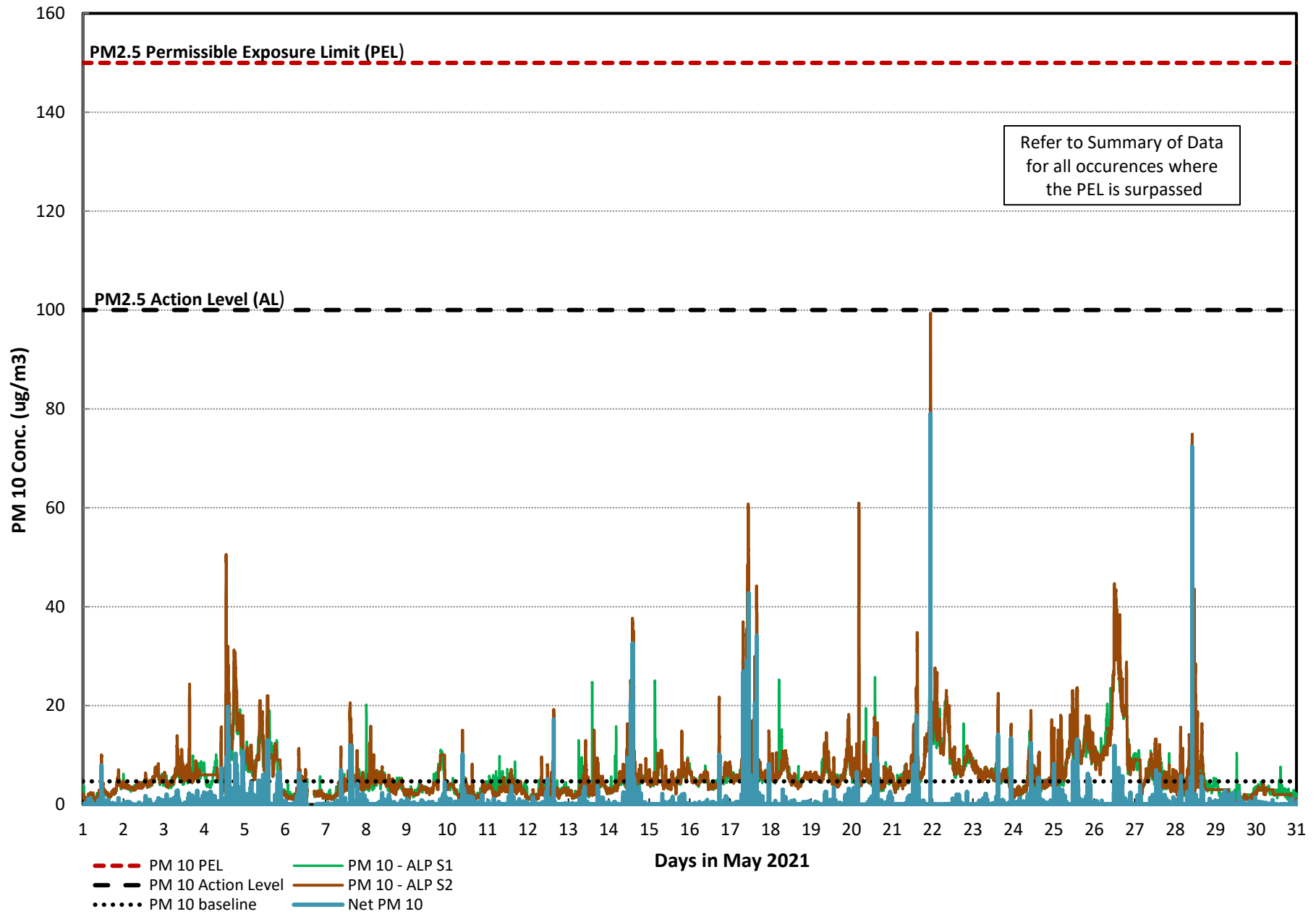


# MAY 2021 DATA PLOTS

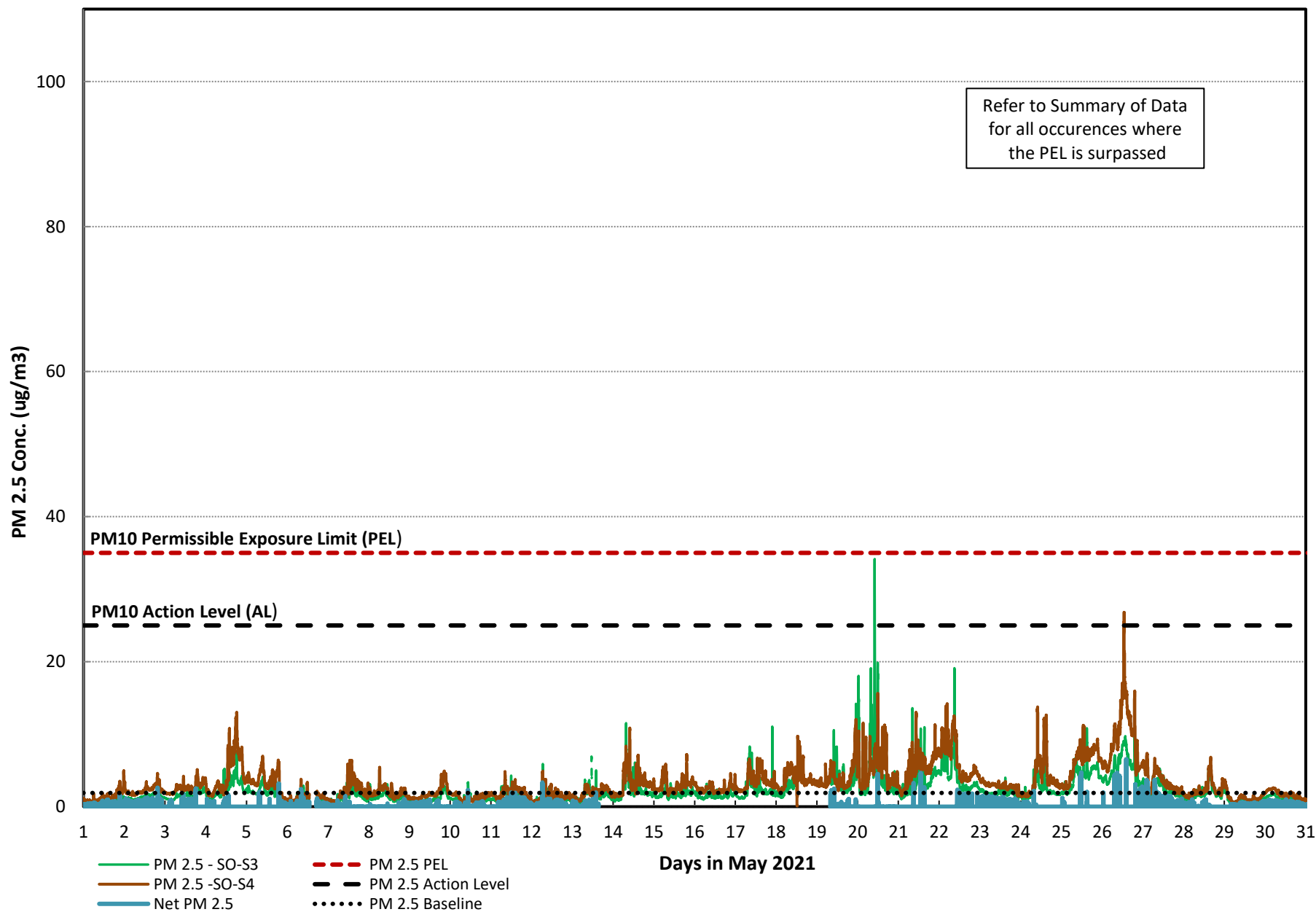
# May 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy



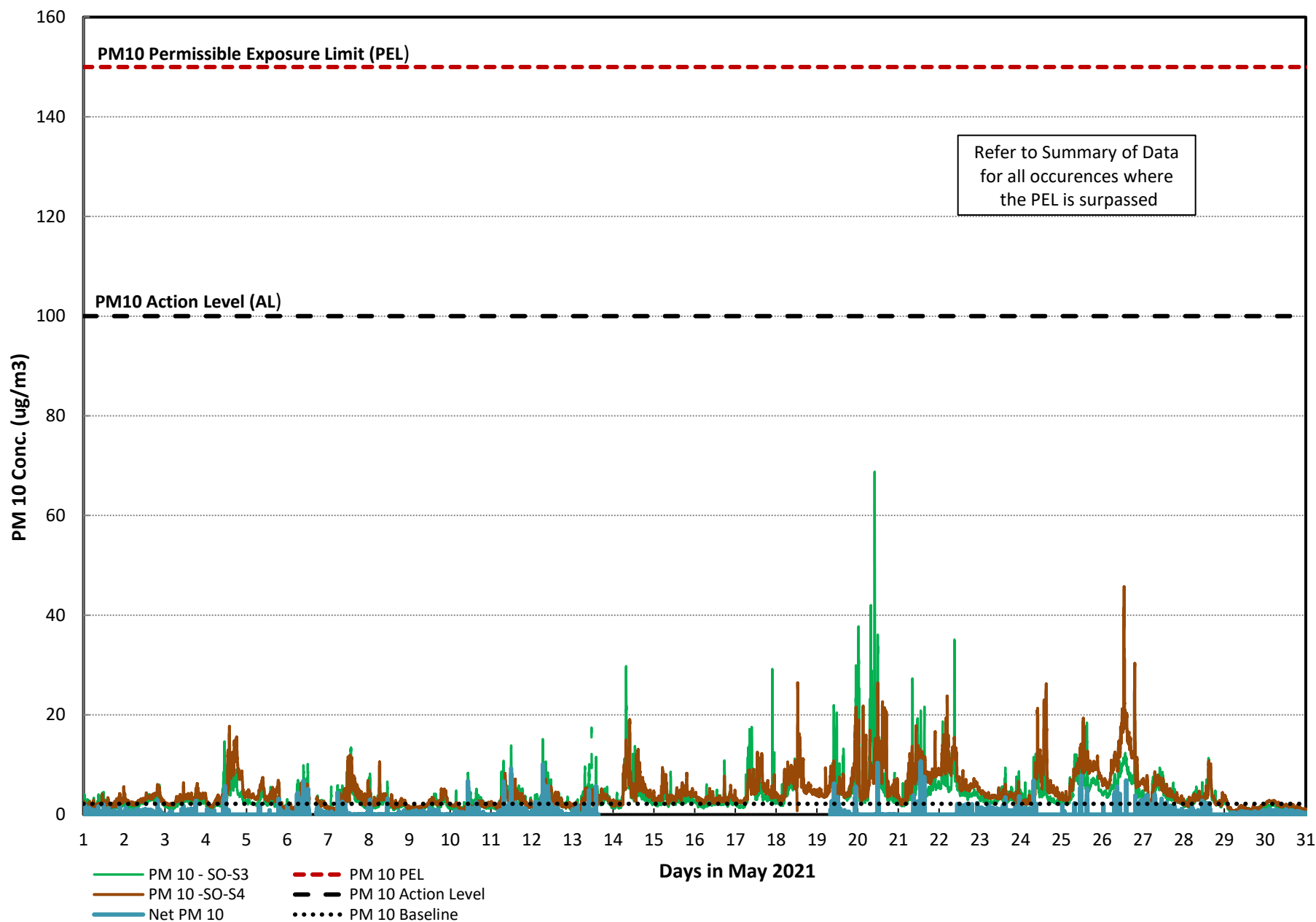
# May 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy



May 2021, 15-Minute Running Average Air Quality Data  
PM 2.5  $\mu\text{g}/\text{m}^3$  Plot at Solar One



# May 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Solar One



## Summary of Data June 2021:

PM levels remained under the Permissible Exposure Limit for PM<sub>10</sub> at Asser Levy Playground and Solar One in the month of June.

PM levels surpassed the Permissible Exposure Limit (15-minute TWA) for PM<sub>2.5</sub> at Asser Levy Playground on 6/5/21. PM levels surpassed the Permissible Exposure Limit (15-minute TWA) for PM<sub>2.5</sub> at Solar One on 6/4/21 and 6/8/21.

For the month of June 2021, construction related Particulate Matter (PM) net 2.5 or 10 levels did not surpass Daily Permissible Exposure Limits (PEL) (24-hour time weighted average).

### **PM 10 µg/m<sup>3</sup>**

- **Asser Levy Playground (ALP):** PM 10 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).
- **Solar One (SO):** PM 10 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).

### **PM 2.5 µg/m<sup>3</sup>**

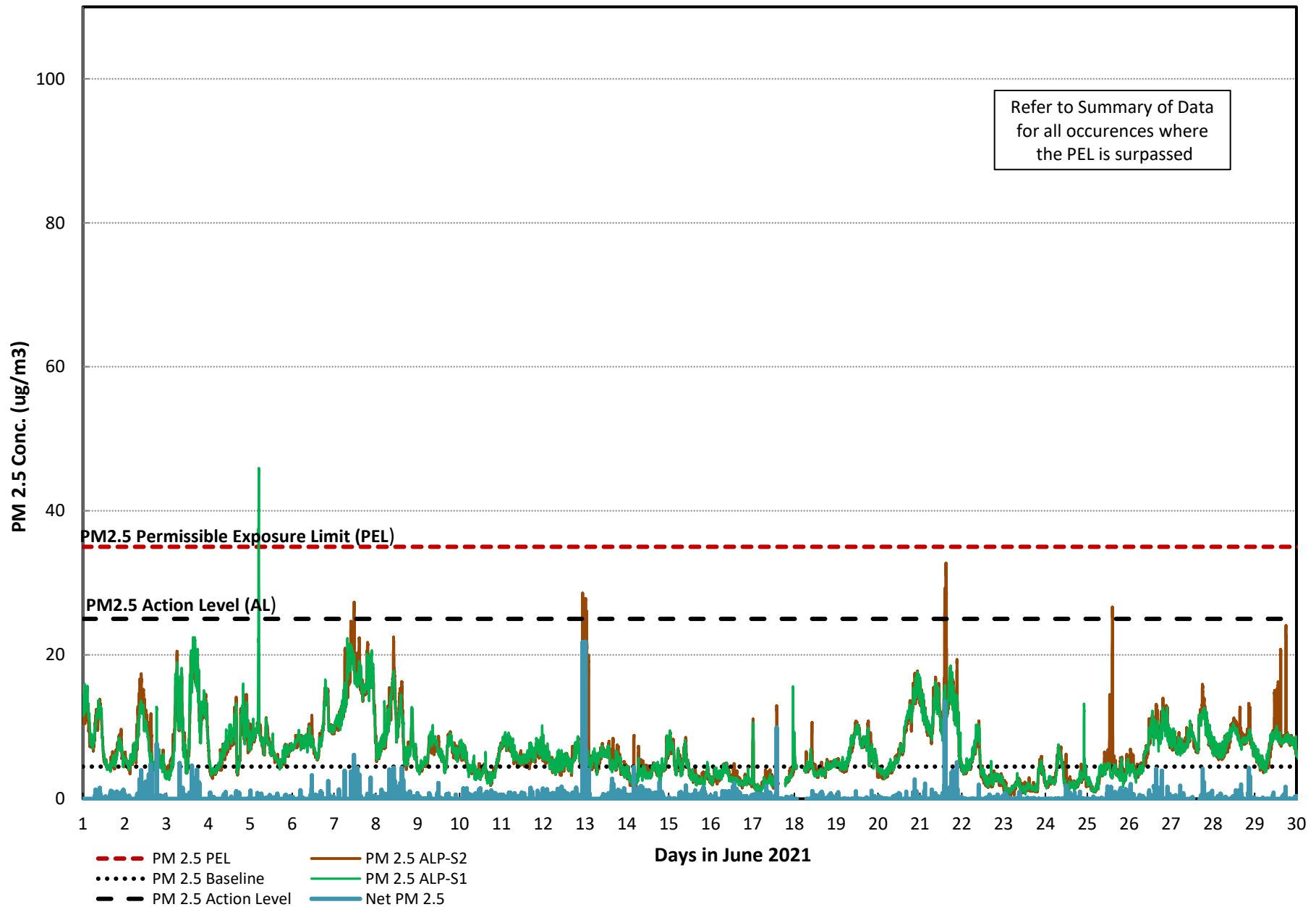
- **Asser Levy Playground (ALP):** PM 2.5 µg/m<sup>3</sup> levels were slightly above the PEL for one 15-minute occurrence on 6/5/21, from 4:41 am to 4:56 am. This was a non-working day for the project and so the values recorded were not due to construction activity.
- **Solar One (SO):** High PM 2.5 µg/m<sup>3</sup> levels were briefly recorded on two occasions:
  1. On 6/4/21, Net PM 2.5 levels surpassed the PEL over the course of 17 minutes, from 9:22 pm to 9:39 pm.
  2. On 6/8/21, PM 2.5 levels were recorded above the PEL for 15 minutes, from 10:10 am to 10:25 am, however the Net PM did not surpass the PEL.

### **Mitigation Measures**

- For item 1, this was after work hours (construction finished at 3:30 pm) and so the values recorded were not due to construction activity.
- For item 2, the downwind station values were undetermined, meaning that wind speeds were less than 0.5 meters per second, and as such, it was highly unlikely that any possible airborne particulates migrated offsite. The short duration of this exceedance exhibits the effectiveness of the contractor's dust control procedures.

# JUNE 2021 DATA PLOTS

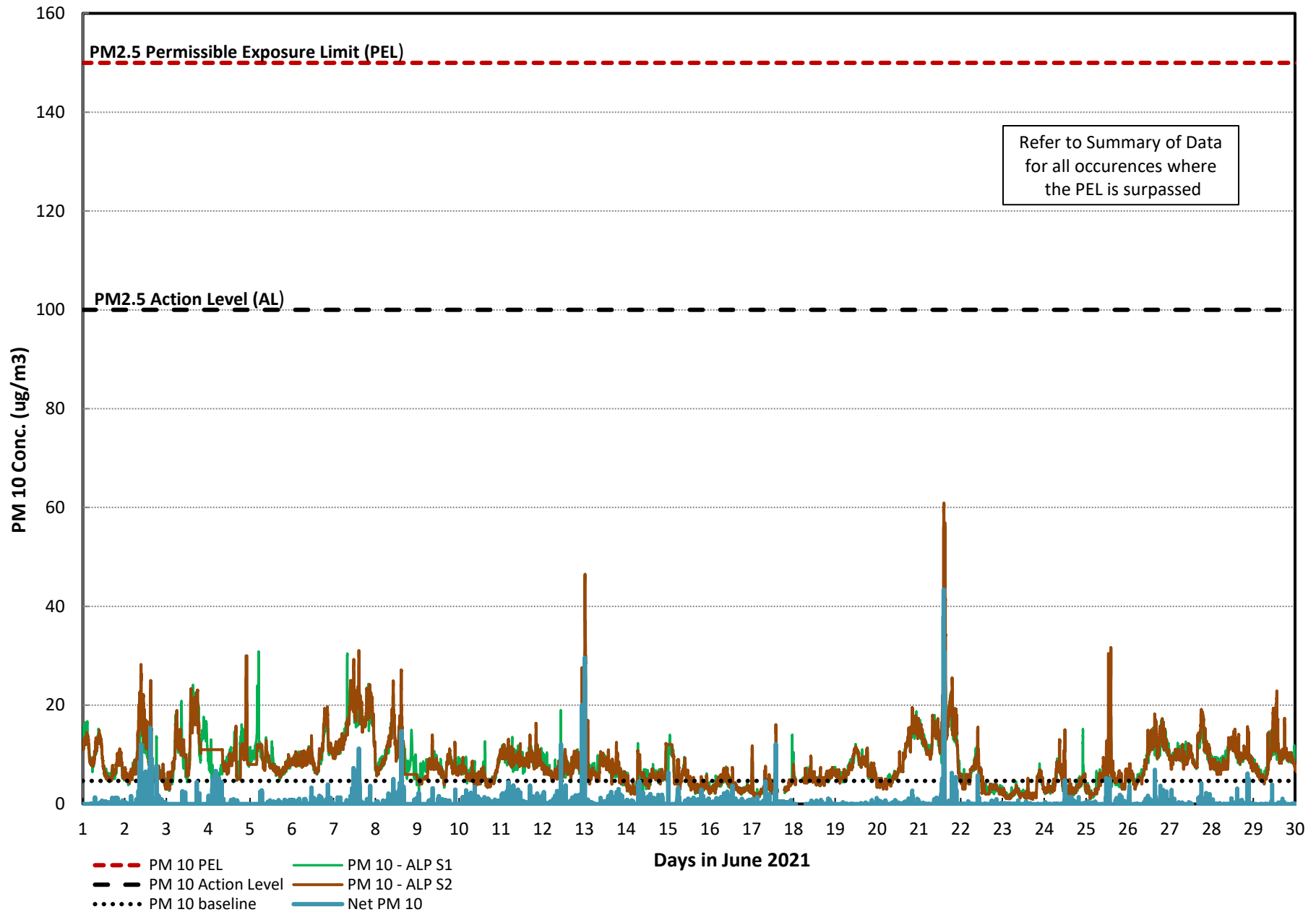
# June 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy



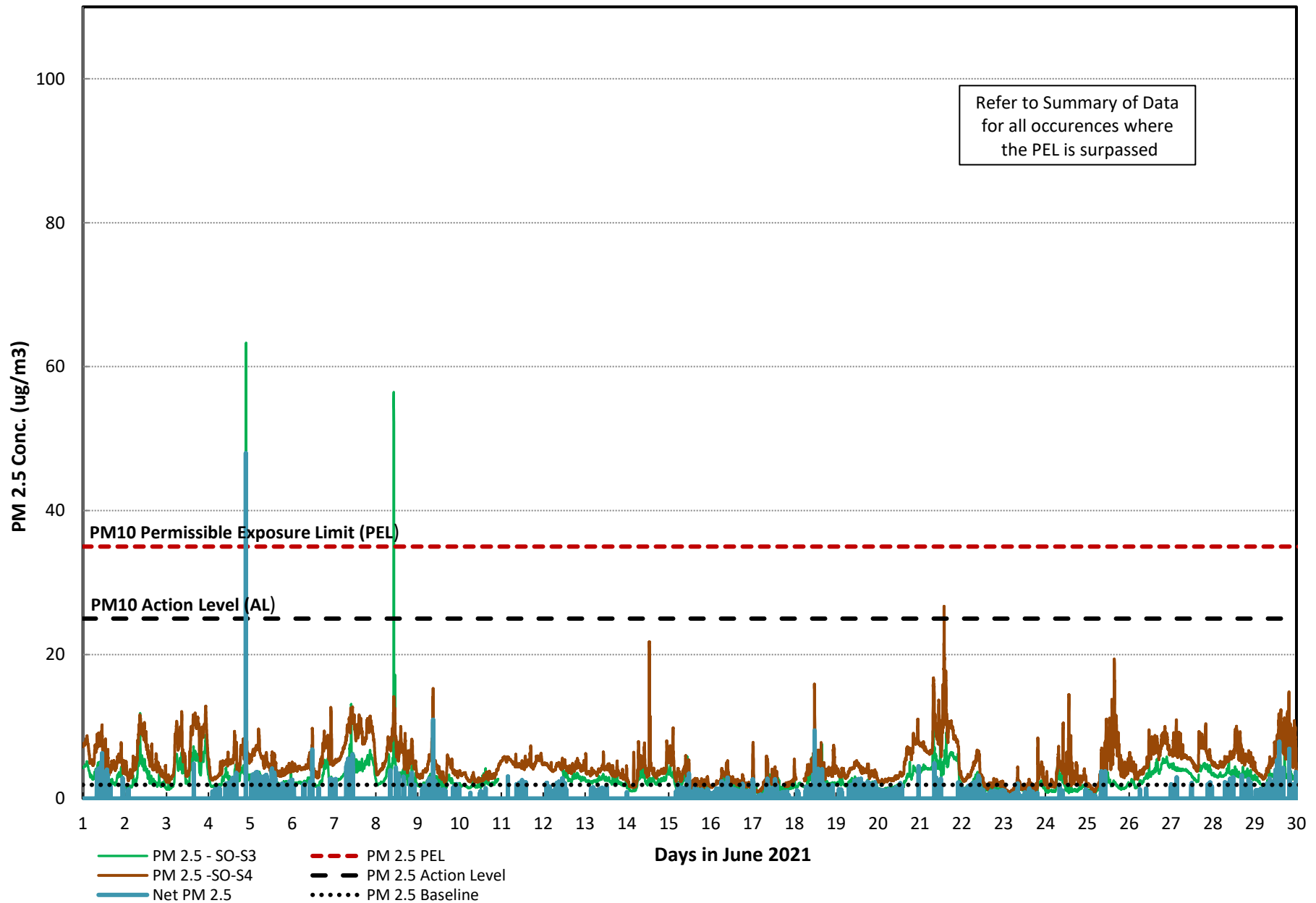


# June 2021, 15-Minute Running Average Air Quality Data

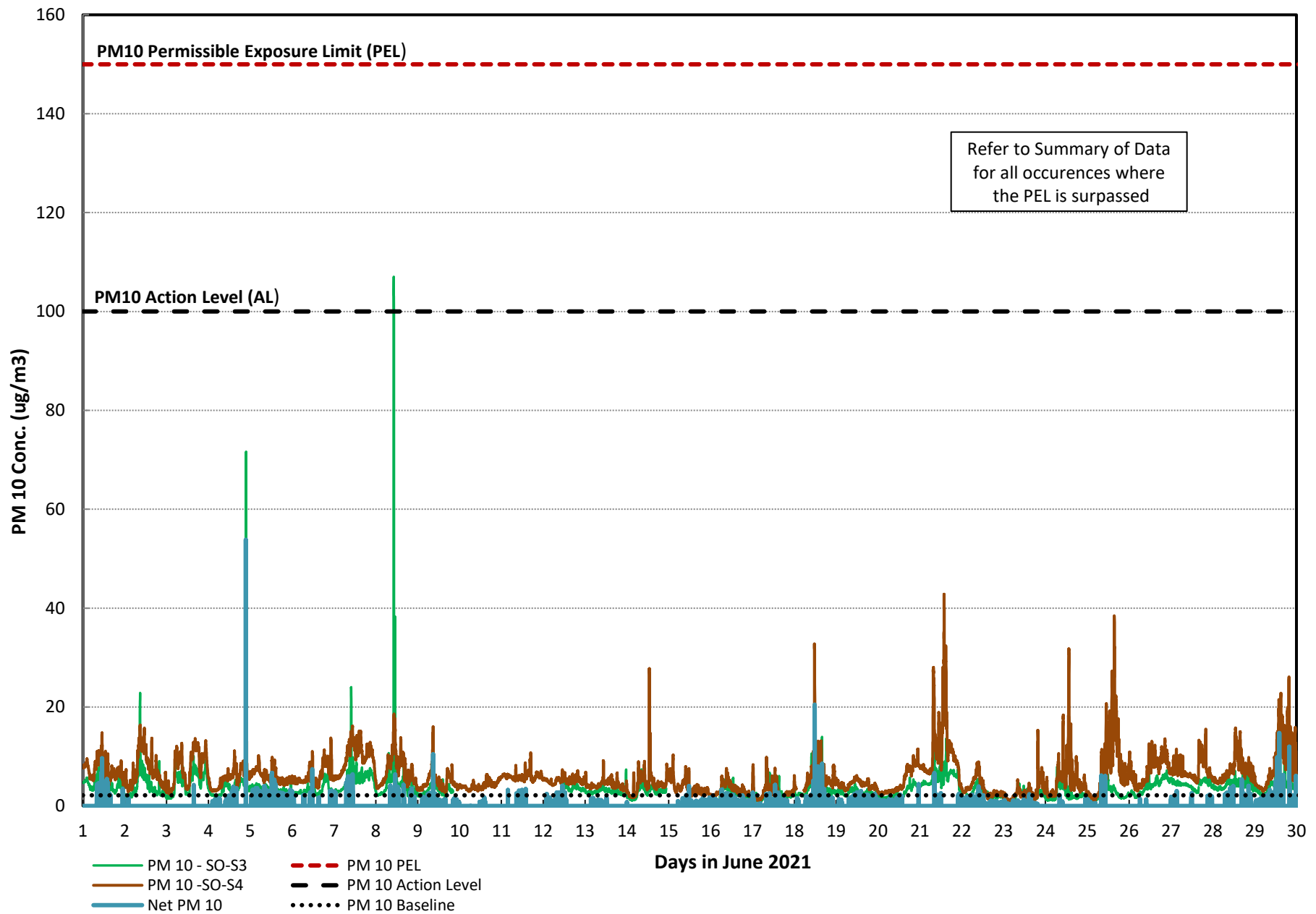
## PM 10 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy



# June 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Solar One



# June 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Solar One



# APPENDIX

## I. Project Area 2 Phasing

### Project Area 2

The construction in Project Area 2 will occur in three main phases from north to south and will be staggered to minimize open space impacts. The construction timeline will be broken down as follows by area (subject to change):

- **Phase I:** Asser Levy Playground Flood Wall/Gates and Park Restoration: **Early 2021 to Mid-2022**
- **Phase I:** Stuyvesant Cove Park: Solar One Flood Wall and Gate: **Early 2021 to Late 2021**
- **Phase II & III:** Stuyvesant Cove Park Flood Wall and Restoration: **Mid-2021 to Mid-2024**  
\*Construction of Stuyvesant Cove Park will occur in phases, starting with closures from East 20<sup>th</sup> Street northwards and moving to the southern end of the Park upon completion of the northern side.
- **Phase IV:** Murphy Brothers Playground Flood Wall and Restoration: **Late 2022 to Late 2024**

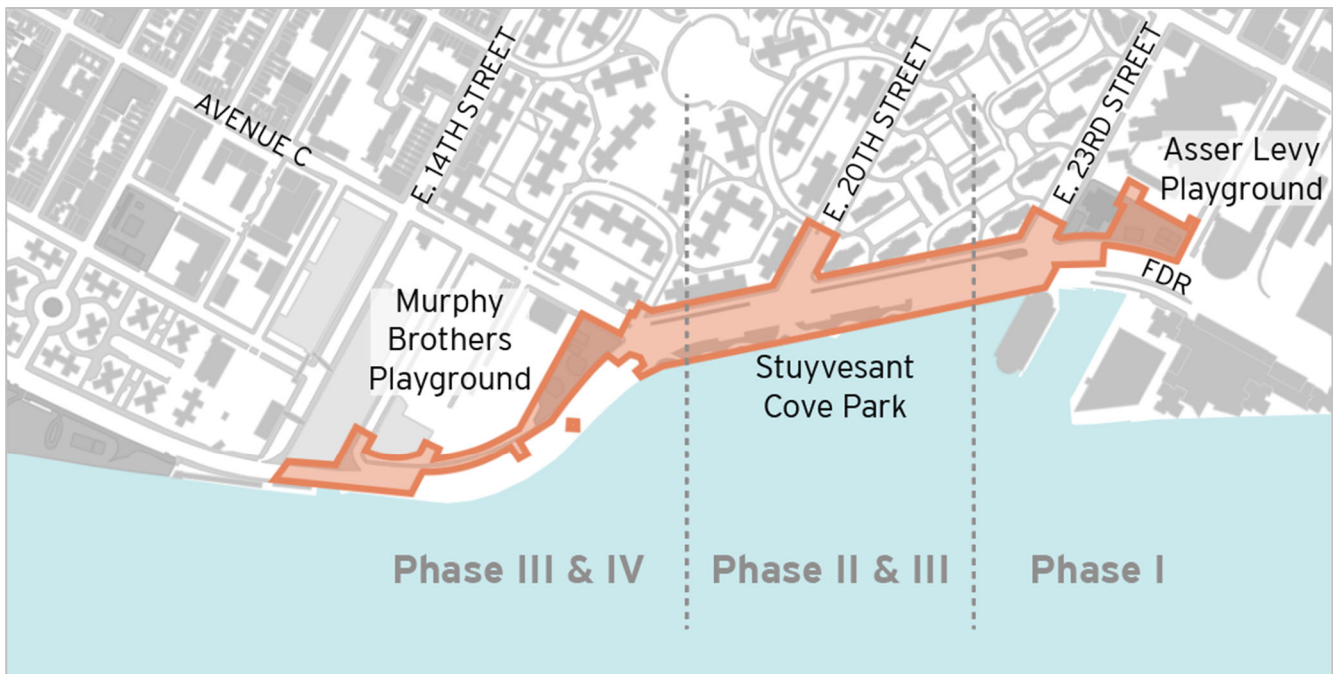


Fig.4 East Side Coastal Resiliency **Project Area 2** Proposed Phasing (subject to change)

## II. ESCR Air Quality Management Program

Community health and safety is of utmost importance to the City of New York, the NYC Department of Design and Construction (DDC), and the East Side Coastal Resiliency Team. The ESCR Team is implementing a multi-level approach to Air Quality Management with includes:

- Step 1: Air Quality Management Plan
- Step 2: Daily Air Quality Mitigation Techniques
- Step 3: Daily Air Quality Monitoring
- Step 4: Air Quality oversight by environmental specialists

### **Step 1: The Air Quality Management Plan**

The AQM Plan is submitted at the start of the project to outline the management of air quality for the project. It includes contractor roles and responsibilities, mitigation techniques, and action plans. This Plan is reviewed and approved by the Program Management / Construction Management (PMCM) Team HNTB-LiRo-Joint Venture, and the DDC.

### **Step 2: Daily Air Quality Mitigation Techniques**

As mentioned in Chapter 6.6 of the EIS, Construction -Hazardous Materials Section “Dust management during soil-disturbing work would include the following: (1) use of water spray for roads, trucks, excavation areas and stockpiles; (2) use of anchored tarps to cover stockpiles; (3) use of truck covers during soil transport within site limits and during off-site transport; (4) employment of extra care during dry and/or high-wind periods; (5) use of gravel or recycled concrete aggregate on egress and other roadways to provide a clean and dust-free road surface; and (6) use of a truck wheel wash at site access/egress points to prevent fugitive dust and off-site migration of dust and other particulates. The source(s) of any dust emissions would be identified and addressed immediately and appropriately.

### **Step 3: Daily Air Quality Monitoring**

The air quality monitoring confirms the daily mitigation techniques in place are being implemented and are effective. Action levels are set to alert the contractor when a technique is not working, and adjustments are required to maintain the levels as set by the National Ambient Air Quality Standards (NAAQS) for PM pollution as mentioned above. Step 3 is implemented daily and mitigation techniques will vary depending on work activities. The EPA Standard Time Weighted Average (TWA) for analyzing PM levels is 24hours, the ESCR project is analyzing levels more frequently at 15min TWA.

### **Step 4: Air Quality Oversight by Environmental Specialists**

The oversight for environmental monitoring for the ESCR project is multi-tiered and includes relationships between several agencies and entities. As shown in the exhibit on the following page, a series of checks and balances have been implemented to assure compliance with environmental regulations. See [Fig. x East Side Coastal Resiliency Air Quality Monitoring Flow Chart](#)

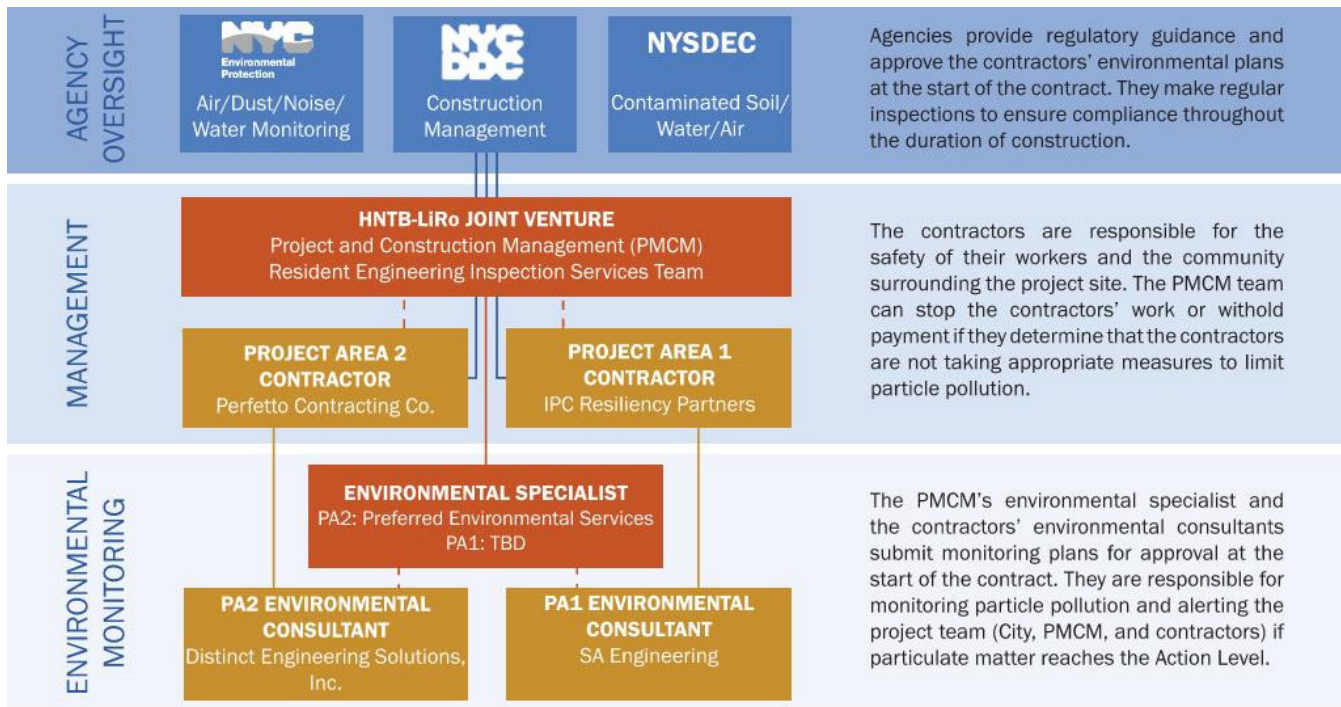


Fig.5 East Side Coastal Resiliency Air Quality Monitoring Flow Chart

### III. RESOURCES

- ESCR Website: <https://www1.nyc.gov/site/escr/index.page>
- ESCR Environmental Review Process web page: <https://www1.nyc.gov/site/escr/about/environmental-review.page>
- FEIS Chapter 5.7 Hazardous Materials: <https://www1.nyc.gov/assets/escr/downloads/pdf/FEIS/ESCR-EIS-Chapter-5.7-Hazardous-Materials.pdf>
- FEIS Chapter 6.6 Construction Hazardous Materials: <https://www1.nyc.gov/assets/escr/downloads/pdf/FEIS/ESCR-EIS-Chapter-6.6-Construction-Hazardous-Materials.pdf>
- EPA Particulate Matter (PM) Pollution - Particulate Matter (PM) Basics: <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#PM>
- EPA Particulate Matter (PM) Pollution - Setting and Reviewing Standards to Control Particulate Matter (PM) Pollution: <https://www.epa.gov/pm-pollution/setting-and-reviewing-standards-control-particulate-matter-pm-pollution>
- EPA Particulate Matter (PM) Pollution - National Ambient Air Quality Standards (NAAQS) for PM: <https://www.epa.gov/pm-pollution/national-ambient-air-quality-standards-naaqs-pm>
- EPA Particulate Matter (PM) Pollution - Applying or Implementing Particulate Matter (PM) Standards: <https://www.epa.gov/pm-pollution/applying-or-implementing-particulate-matter-pm-standards>