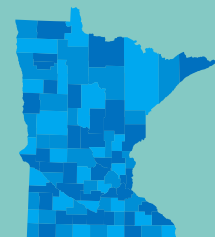


March 2026

Adjustment to 2022-204 fine particulate matter background used in air dispersion modeling to account for wildfire smoke



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Document number: aq2-215

Overview

Air dispersion modeling background concentrations are typically set to the current monitor design values. This document provides evidence that monitors were impacted by smoke in 2022, 2023, and 2024, and that the 2022-2024 design values are inflated by smoke. This document also provides model background concentrations without the influence of wildfire smoke and windblown dust. During 2022, Minnesota was affected by fires in the southwest US and western Canada. In 2023 and 2024, wildfire smoke from Canada made numerous incursions into Minnesota. While the smoke did not change the attainment status at any locations, the smoke significantly increased the background concentrations of 24-hour coarse particulate (PM₁₀) and 24-hour and annual fine particulate (PM_{2.5}) used for air dispersion modeling.

In 2022, smoke from wildfires in the southwest United States (US) impacted Minnesota monitors on June 14, and a combination of smoke from wildfires in western Canada and prescribed fires in southern Saskatchewan, Manitoba, and North Dakota impacted Minnesota monitors on October 20-22. In 2023, smoke from fires located in Canada impacted Minnesota monitors from May 16 to September 22. In 2024, smoke from fires located in northwest Canada impacted Minnesota monitors from May 12-15, followed by frequent smoke impacts from fires in central and western Canada between July 12-September 20. For September 10-12, some smoke from US wildfires was also in the mix.

Figure 1a: Criteria pollutant monitoring sites in Minnesota.

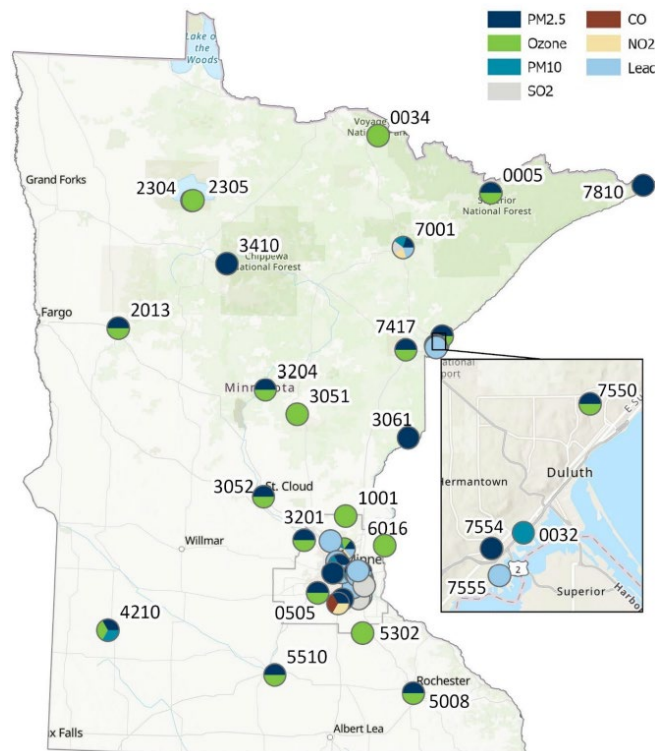
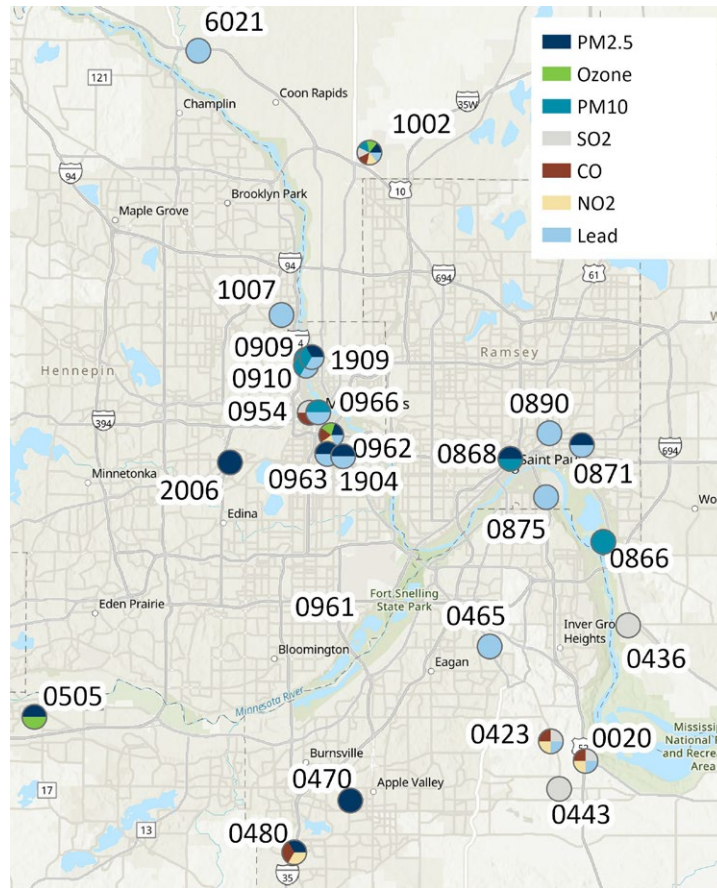


Figure 1b: Criteria pollutant monitoring sites in the Twin Cities area.



For 24-hour $PM_{2.5}$, monitors in northern Minnesota had the greatest smoke impacts. The highest impact was at Leech Lake, where smoke pushed the 2021 98th percentile from $17.6 \mu\text{g}/\text{m}^3$ to $48.5 \mu\text{g}/\text{m}^3$. Even monitors in southern Minnesota, farther away from the fires, had an increase of at least $3\text{-}5 \mu\text{g}/\text{m}^3$ due to the smoke. Tables 1, 2, and 3 list the 98th percentile 24-hour $PM_{2.5}$ values for 2022, 2023, and 2024, respectively. Smoke was observed on a few days in 2022, but impacts to the 98th percentile $PM_{2.5}$ concentrations in 2022 were relatively small (see Table 1). For most monitors, 2023 had the greatest impacts to the 98th percentile 24-hour $PM_{2.5}$ values (See Table 2). Smoke also significantly increased the 98th percentile values in 2024 (see Table 3). Table 4 lists the 2022-2024 24-hour $PM_{2.5}$ design values with and without smoke.

There was also a measurable impact on annual $PM_{2.5}$ values due to wildfire smoke (Tables 5, 6, and 7). Many monitors had their annual $PM_{2.5}$ design values for 2022-2024 increase by $1\text{-}3 \mu\text{g}/\text{m}^3$ due to smoke impacts (see Table 8). Many facilities could have difficulty modeling below the daily and annual $PM_{2.5}$ NAAQS using unadjusted design value concentrations.

Table 1: Summary of 2022 24-hour PM_{2.5} 98th percentile values including and excluding days influenced by wildfire smoke.

Monitor name	AQS	PM _{2.5} 98 th percentile including wildfire smoke (µg/m ³)	PM _{2.5} 98 th percentile excluding wildfire smoke (µg/m ³)
Apple Valley	270370470	15.1	14.9
Blaine	270031002	15.7	14.5
Brainerd	270353204	15.8	14.5
Detroit Lakes	270052013	13.1	12.8
Duluth-WDSE	271377550	12.8	12.4
Ely	270750005	12.8	12.8
Fargo NW	380171004	22.1	19.5
Fond du Lac	270177417	7.7	7.7
Grand Portage	270317810	8.3	7.4
Lacrosse DOT	550630012	18.9	17.1
Lakeville – Near Road	270370480	16.4	16
Leech Lake Nation	270213410	13.2	12.5
Marshall*	270834210	20	14
Minneapolis-Near Road	270530962	19.2	18.3
Minneapolis-Phillips	270530963	19	17.5
Red Lake Nation	270072304	11.3	11.3
Rochester	271095008	19.5	17.1
Shakopee	271390505	16.5	15.4
St. Cloud	271453052	17	15.2
St. Michael	271713201	15.9	15.7
St. Paul-Harding	271230871	17.4	16.6
Virginia	271377001	11.8	11.7
West Duluth	271377554	13.3	13.3

*Excludes erroneously high values at Marshall 2/22/22 to 2/25/22

Table 2: Summary of 2023 24-hour PM_{2.5} 98th percentile values including and excluding days influenced by wildfire smoke.

Monitor name	AQS	PM _{2.5} 98 th percentile including wildfire smoke (µg/m ³)	PM _{2.5} 98 th percentile excluding wildfire smoke (µg/m ³)
Apple Valley	270370470	41	24.2
Blaine	270031002	30.6	18.8
Brainerd	270353204	29	19.6
Detroit Lakes	270052013	31.3	16.4

Monitor name	AQS	PM _{2.5} 98 th percentile including wildfire smoke (µg/m ³)	PM _{2.5} 98 th percentile excluding wildfire smoke (µg/m ³)
Duluth-WDSE	271377550	27.1	15.5
Ely	270750005	26.4	12.6
Fargo NW	380171004	36.5	21.6
Fond du Lac	270177417	24.6	13.5
Grand Portage	270317810	20.2	12.5
Lacrosse DOT*	550630012	34.7	34.8
Lakeville – Near Road	270370480	36.2	21.3
Leech Lake Nation	270213410	27.4	14.9
Marshall	270834210	42.6	16.1
Minneapolis-Near Road	270530962	36	21.2
Minneapolis-Phillips	270530963	38.4	29.6
Red Lake Nation	270072304	30.8	13.8
Rochester	271095008	32.9	19.9
Shakopee	271390505	32.7	23.9
St. Cloud	271453052	33.8	22.9
St. Michael	271713201	34.2	18.9
St. Paul-Harding	271230871	40.5	22.1
Virginia	271377001	26.2	14.2
West Duluth	271377554	27.2	14.4

**Lacrosse DOT was decommissioned in December 2023

Table 3: Summary of 2024 24-hour PM_{2.5} 98th percentile values including and excluding days influenced by wildfire smoke.

Monitor name	AQS	PM _{2.5} 98 th percentile including wildfire smoke (µg/m ³)	PM _{2.5} 98 th percentile excluding wildfire smoke (µg/m ³)
Apple Valley	270370470	21	19.2
Blaine	270031002	18.5	17.7
Brainerd	270353204	17.3	13.8
Detroit Lakes	270052013	21	13.5
Duluth-WDSE	271377550	19.5	14.1
Ely	270750005	18.5	12.1
Fargo NW	380171004	21.7	12.8
Fond du Lac	270177417	16.5	12.5
Grand Portage	270317810	14.7	10.4
Lakeville – Near Road	270370480	17.6	15.7
Leech Lake Nation	270213410	19.5	14.2

Monitor name	AQS	PM _{2.5} 98 th percentile including wildfire smoke (µg/m ³)	PM _{2.5} 98 th percentile excluding wildfire smoke (µg/m ³)
Marshall	270834210	18.2	16.7
Minneapolis-East Phillips	270531904	21.5	18.6
Minneapolis-Near Road	270530962	18.9	17.3
Minneapolis-Phillips	270530963	24.4	22.7
Red Lake Nation	270072304	24.8	14.9
Rochester	271095008	18.3	16.2
Shakopee	271390505	22.6	19.6
St. Cloud	271453052	18.3	14.5
St. Michael	271713201	18.3	15.7
St. Paul-Harding	271230871	20.8	19
Virginia	271377001	20.9	12.9
West Duluth	271377554	19.1	14

Table 4: Summary of 2022-2024 24-hour PM_{2.5} design values and 24-hour PM_{2.5} dispersion modeling background concentrations which excludes days influenced by wildfire smoke.

Monitor name	AQS	PM _{2.5} 24-hour design values including wildfire smoke (µg/m ³)	PM _{2.5} 24-hour model background excluding wildfire smoke (µg/m ³)
Apple Valley	270370470	26	22
Blaine	270031002	22	18
Brainerd	270353204	20	16
Detroit Lakes	270052013	22	15
Duluth-WDSE	271377550	20	14
Ely	270750005	19	13
Fargo NW	380171004	26	20
Fond du Lac	270177417	16	11
Grand Portage	270317810	14	11
Lakeville – Near Road	270370480	23	19
Leech Lake Nation	270213410	20	14
Marshall	270834210	27	18
Minneapolis-Near Road	270530962	24	21
Minneapolis-Phillips	270530963	27	24
Red Lake Nation	270072304	22	14
Rochester	271095008	23	18
Shakopee	271390505	24	22
St. Cloud	271453052	22	18
St. Michael	271713201	23	17
St. Paul-Harding	271230871	26	22

Monitor name	AQS	PM _{2.5} 24-hour design values including wildfire smoke (µg/m ³)	PM _{2.5} 24-hour model background excluding wildfire smoke (µg/m ³)
Virginia	271377001	20	13
West Duluth	271377554	20	14

*Design value based on incomplete data

Table 5: Summary of 2022 Annual PM_{2.5} concentrations including and excluding days influenced by wildfire smoke.

Monitor name	AQS	PM _{2.5} 2022 annual concentrations including wildfire smoke (µg/m ³)	PM _{2.5} 2022 annual concentrations excluding wildfire smoke (µg/m ³)*
Apple Valley	270370470	6.1	6.2
Blaine	270031002	5.9	5.8
Brainerd	270353204	5.7	5.6
Detroit Lakes	270052013	5.1	5.2
Duluth-WDSE	271377550	3.1	3.6
Ely	270750005	4.3	4.3
Fargo NW	380171004	7.6	7.5
Fond du Lac	270177417	1.4	1.4
Grand Portage	270317810	1.2	1.2
Lacrosse DOT	550630012	7.4	7.3
Lakeville – Near Road	270370480	6.3	6.3
Leech Lake Nation	270213410	5.9	5.9
Marshall	270834210	5.9	5.8
Minneapolis-Near Road	270530962	7.6	7.5
Minneapolis-Phillips	270530963	7.8	7.6
Red Lake Nation	270072304	4.7	4.7
Rochester	271095008	6.5	6.4
Shakopee	271390505	6.9	6.7
St. Cloud	271453052	6.6	6.5
St. Michael	271713201	6.2	6.0
St. Paul-Harding	271230871	6.6	6.6
Virginia	271377001	4.6	4.6
West Duluth	271377554	3.9	3.8

*Also omits any daily values <0 µg/m³

Table 6: Summary of 2023 Annual PM_{2.5} including and excluding days influenced by wildfire smoke.

Monitor name	AQS	PM _{2.5} 2023 annual concentrations including wildfire smoke (µg/m ³)	PM _{2.5} 2023 annual concentrations excluding wildfire smoke (µg/m ³)*
Apple Valley	270370470	10.7	8.6
Blaine	270031002	8.5	7.6
Brainerd	270353204	8.0	6.5
Detroit Lakes	270052013	8.4	6.5
Duluth-WDSE	271377550	7.6	6.1
Ely	270750005	5.9	4.5
Fargo NW	380171004	11.4	8.8
Fond du Lac	270177417	5.9	4.4
Grand Portage	270317810	4.0	3.2
Lacrosse DOT**	550630012	9.3	9.3
Lakeville – Near Road	270370480	9.6	7.8
Leech Lake Nation	270213410	7.5	6.0
Marshall	270834210	9.6	7.2
Minneapolis-Near Road	270530962	10.2	8.5
Minneapolis-Phillips	270530963	10.3	8.8
Red Lake Nation	270072304	7.8	5.0
Rochester	271095008	9.6	7.9
Shakopee	271390505	10.5	8.5
St. Cloud	271453052	9.5	7.7
St. Michael	271713201	9.2	7.7
St. Paul-Harding	271230871	10.1	8.4
Virginia	271377001	7.1	5.8
West Duluth	271377554	7.6	6.1

*Also omits any daily values <0 µg/m³

**Lacrosse DOT was decommissioned in December 2023

Table 7: Summary of 2024 Annual PM_{2.5} concentrations including and excluding days influenced by wildfire smoke.

Monitor name	AQS	PM _{2.5} 2024 annual concentrations including wildfire smoke (µg/m ³)	PM _{2.5} 2024 annual concentrations excluding wildfire smoke (µg/m ³)
Apple Valley	270370470	7.87	7.42
Blaine	270031002	6.67	6.35
Brainerd	270353204	5.91	5.47
Detroit Lakes	270052013	6.16	5.45

Monitor name	AQS	PM _{2.5} 2024 annual concentrations including wildfire smoke (µg/m ³)	PM _{2.5} 2024 annual concentrations excluding wildfire smoke (µg/m ³)
Duluth-WDSE	271377550	5.73	5.16
Ely	270750005	4.36	3.84
Fargo NW	380171004	6.87	5.29
Fond du Lac	270177417	5.12	4.71
Grand Portage	270317810	4.24	3.61
Lakeville – Near Road	270370480	6.65	6.31
Leech Lake Nation	270213410	6.13	5.46
Marshall	270834210	6.83	6.34
Minneapolis-East Phillips	270531904	7.75	7.41
Minneapolis-Near Road	270530962	7.38	7.03
Minneapolis-Phillips	270530963	7.82	7.49
Red Lake Nation	270072304	6.29	5.28
Rochester	271095008	8.14	7.66
Shakopee	271390505	7.74	7.31
St. Cloud	271453052	6.69	6.22
St. Michael	271713201	6.79	6.41
St. Paul-Harding	271230871	7.47	7.14
Virginia	271377001	5.78	5.17
West Duluth	271377554	6.02	5.45

Table 8: Summary of 2022-2024 annual PM_{2.5} design values and annual PM_{2.5} dispersion modeling background concentrations which excludes days influenced by wildfire smoke.

Monitor name	AQS	PM _{2.5} annual design values including wildfire smoke (µg/m ³)	PM _{2.5} annual design values excluding wildfire smoke (µg/m ³)
Apple Valley	270370470	8	7.2
Blaine	270031002	7	6.6
Brainerd	270353204	6.4	5.8
Detroit Lakes	270052013	6.6	5.7
Duluth-WDSE	271377550	5.4	4.7
Ely	270750005	4.7	4.2
Fargo NW	380171004	8.2	6.6
Fond du Lac	270177417	4.1	3.5
Grand Portage	270317810	3.1	2.7
Lakeville – Near Road	270370480	7.3	6.6

Monitor name	AQS	PM_{2.5} annual design values including wildfire smoke (µg/m³)	PM_{2.5} annual design values excluding wildfire smoke (µg/m³)
Leech Lake Nation	270213410	6.5	5.8
Marshall	270834210	7.6	6.7
Minneapolis-Near Road	270530962	8.2	7.6
Minneapolis-Phillips	270530963	8.4	7.8
Red Lake Nation	270072304	6.2	5
Rochester	271095008	7.9	7.2
Shakopee	271390505	8.2	7.4
St. Cloud	271453052	7.4	6.7
St. Michael	271713201	7.2	6.6
St. Paul-Harding	271230871	8	7.3
Virginia	271377001	5.7	5.1
West Duluth	271377554	5.7	5.1

*Design value based on incomplete data

Meteorological and climatological conditions

2022

During June of 2022, severe to extreme drought was ongoing over the southwest US (Figure 2a). Western Canada began the summer with drought-free conditions, but by early fall much of British Columbia and Alberta was experiencing drought (Figure 2b).

Figure 2a: North American Drought Monitor for June 30, 2022.

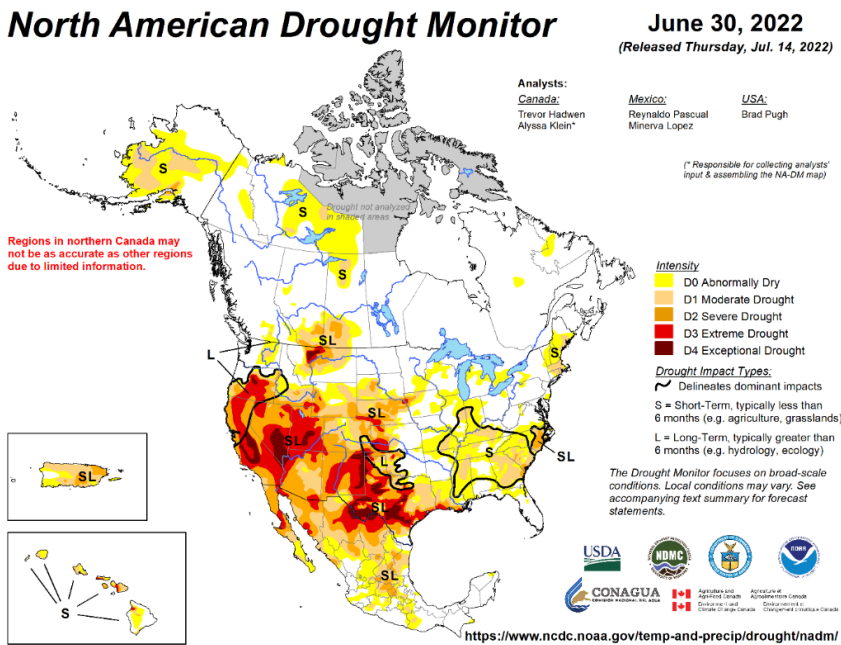
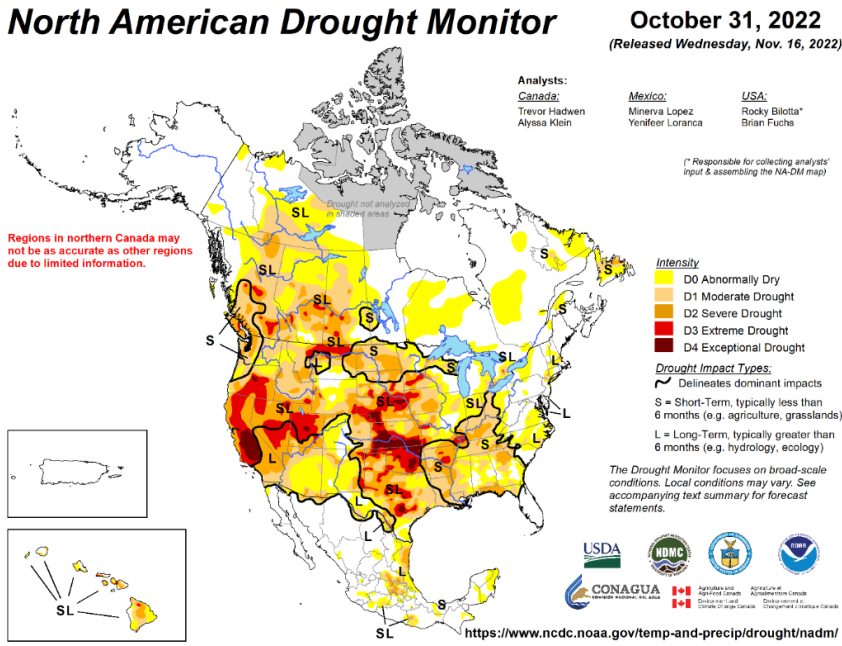


Figure 2b: North American Drought Monitor for October 31, 2022.



2023

Throughout the summer of 2023, drought dominated much of Canada (Figure 3a-3f). The dry conditions set the stage for a record fire season in Canada.

Figure 3a: North American Drought Monitor for April 30, 2023.

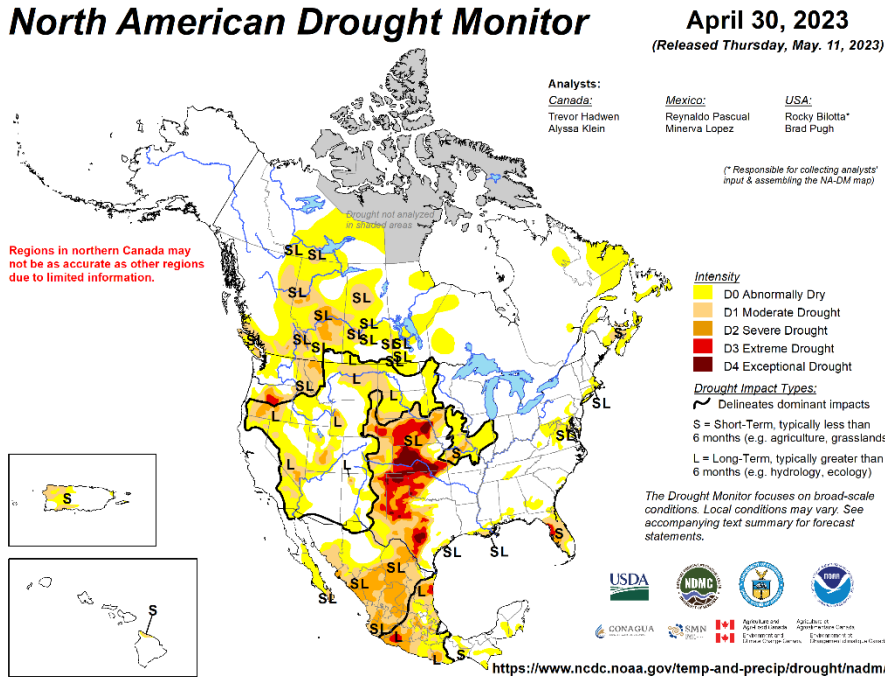


Figure 3b: North American Drought Monitor for May 31, 2023.

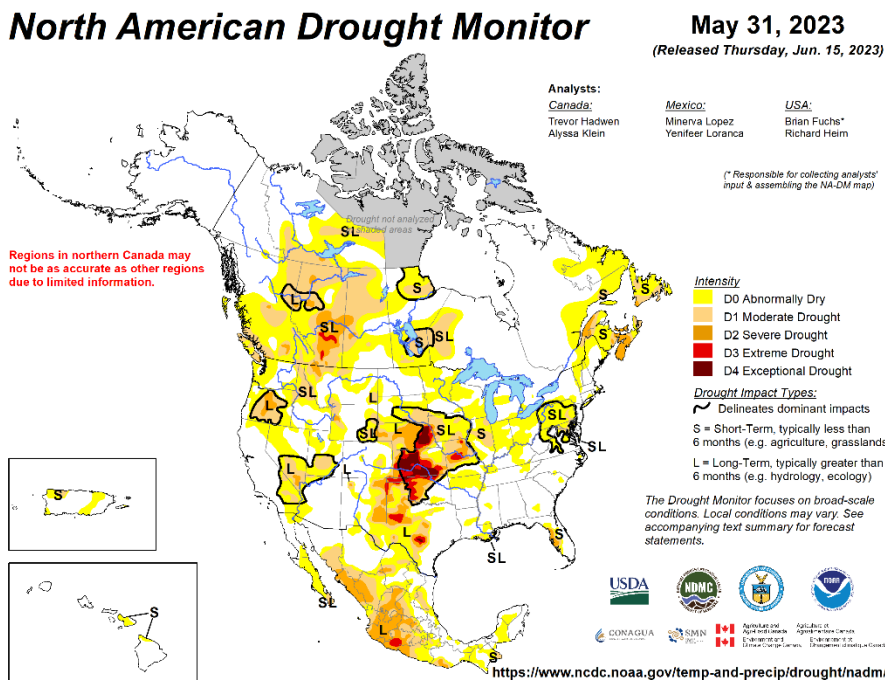


Figure 3c: North American Drought Monitor for June 30, 2023.

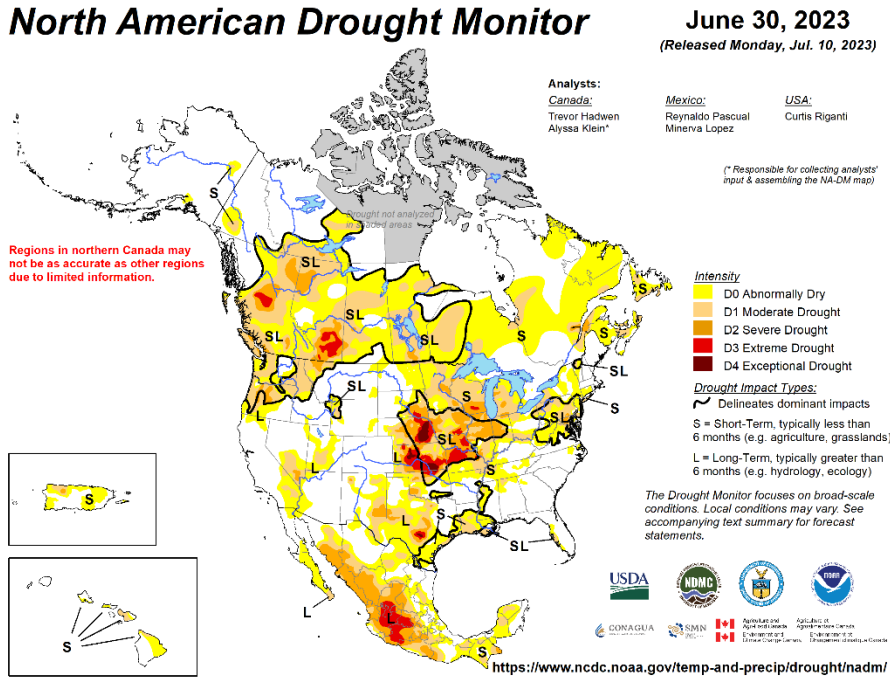


Figure 3d: North American Drought Monitor for July 31, 2023.

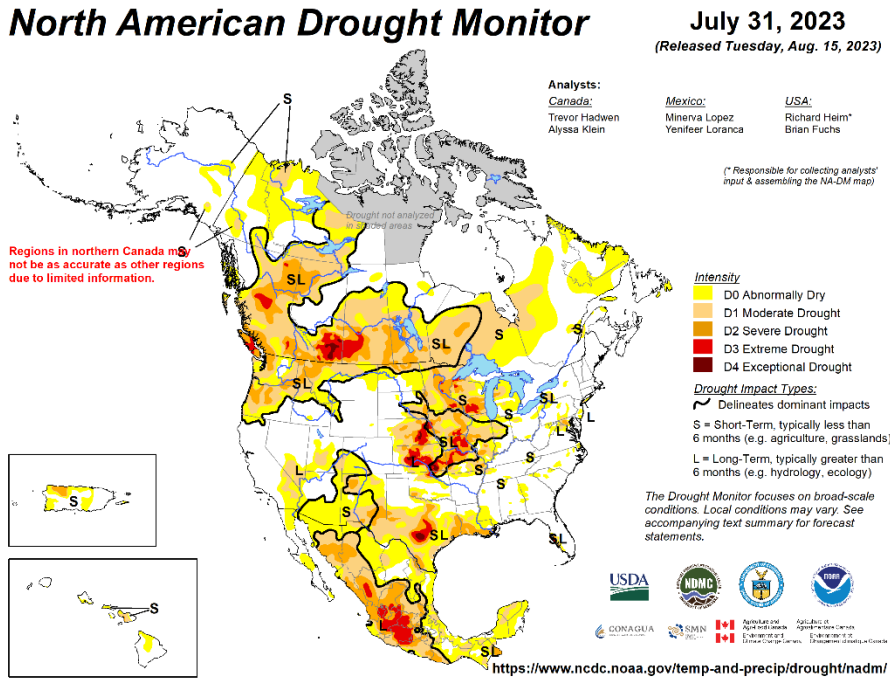


Figure 3e: North American Drought Monitor for August 31, 2023.

North American Drought Monitor

August 31, 2023
(Released Thursday, Sep. 14, 2023)

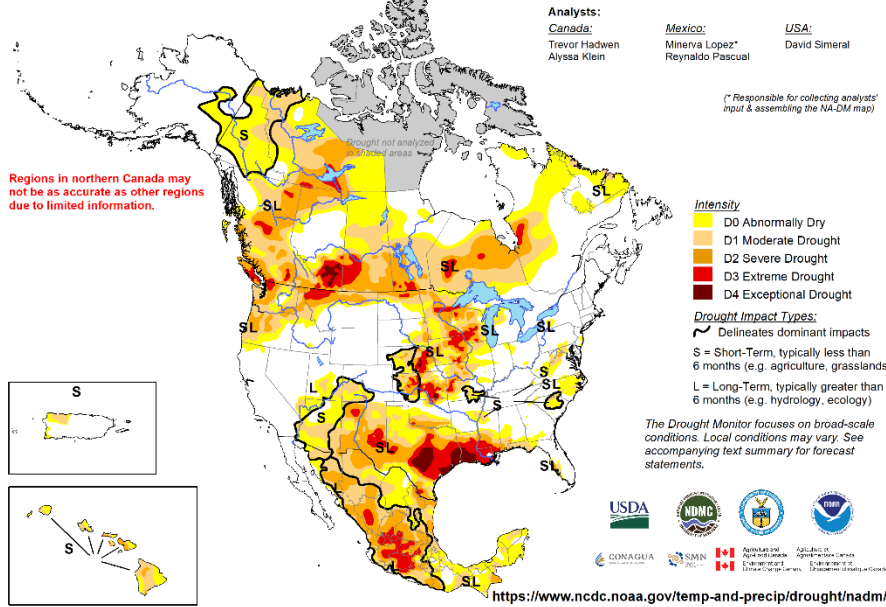
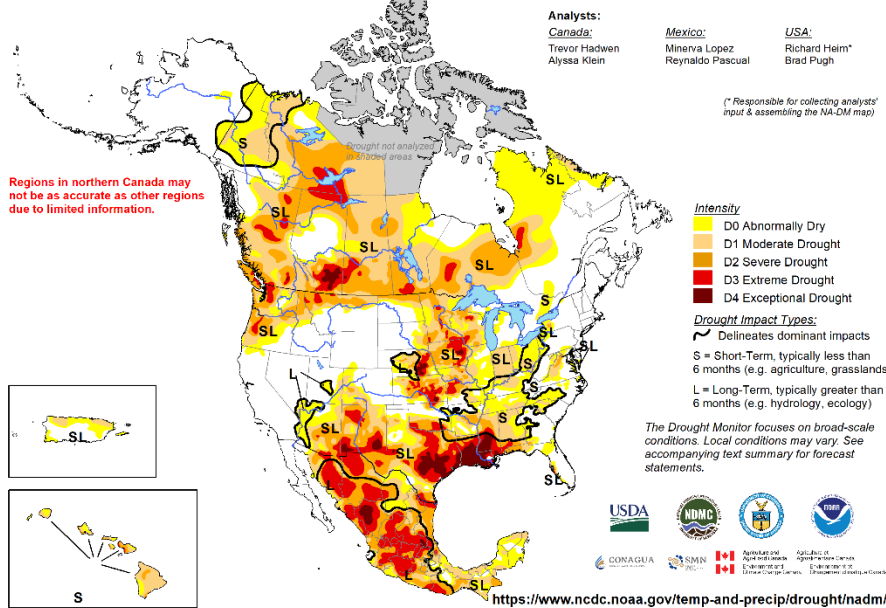


Figure 3f: North American Drought Monitor for September 30, 2023.

North American Drought Monitor

September 30, 2023
(Released Tuesday, Oct. 17, 2023)



2024

Throughout the summer of 2024, drought dominated much of Canada (Figure 4a-4f). The dry conditions set the stage for an above normal fire season in Canada.

Figure 4a: North American Drought Monitor for April 30, 2024.

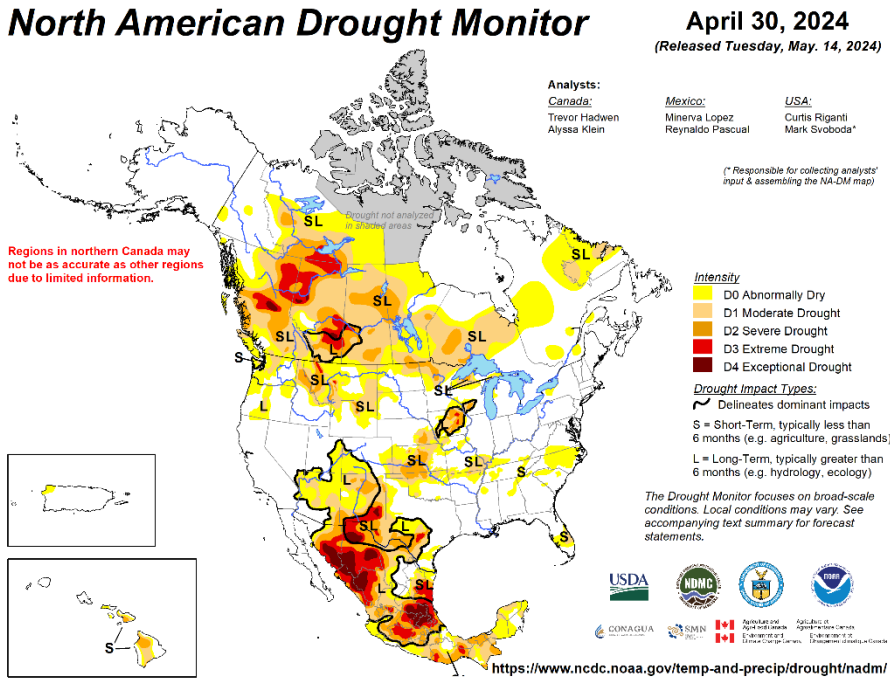


Figure 4b: North American Drought Monitor for May 31, 2024.

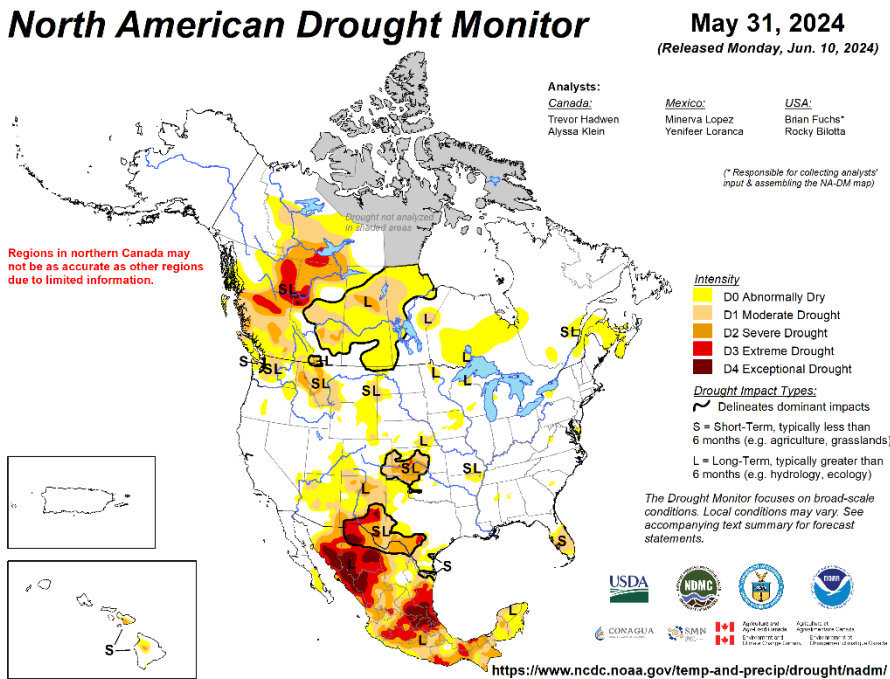


Figure 4c: North American Drought Monitor for June 30, 2024.

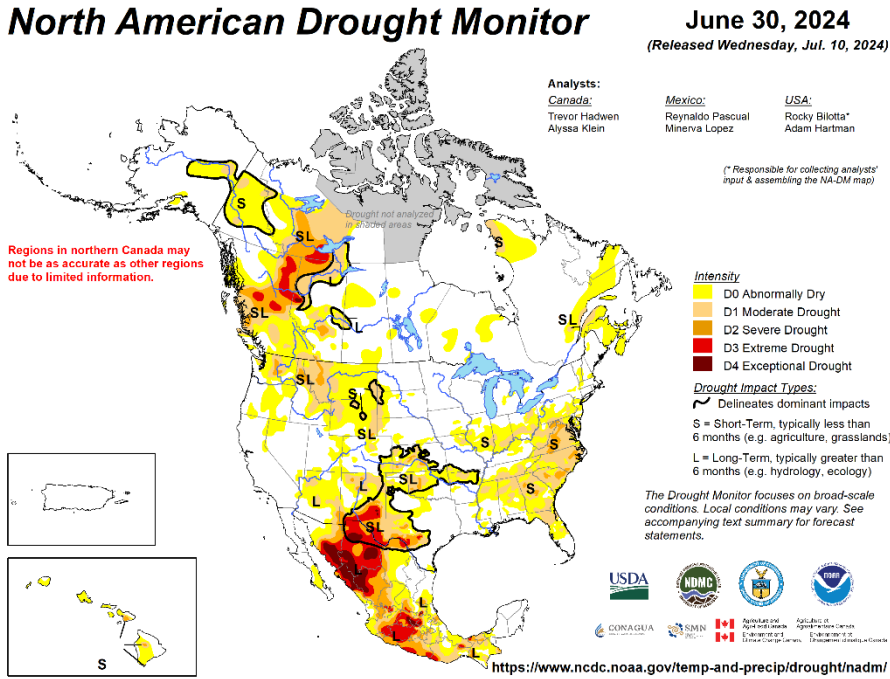


Figure 4d: North American Drought Monitor for July 31, 2024.

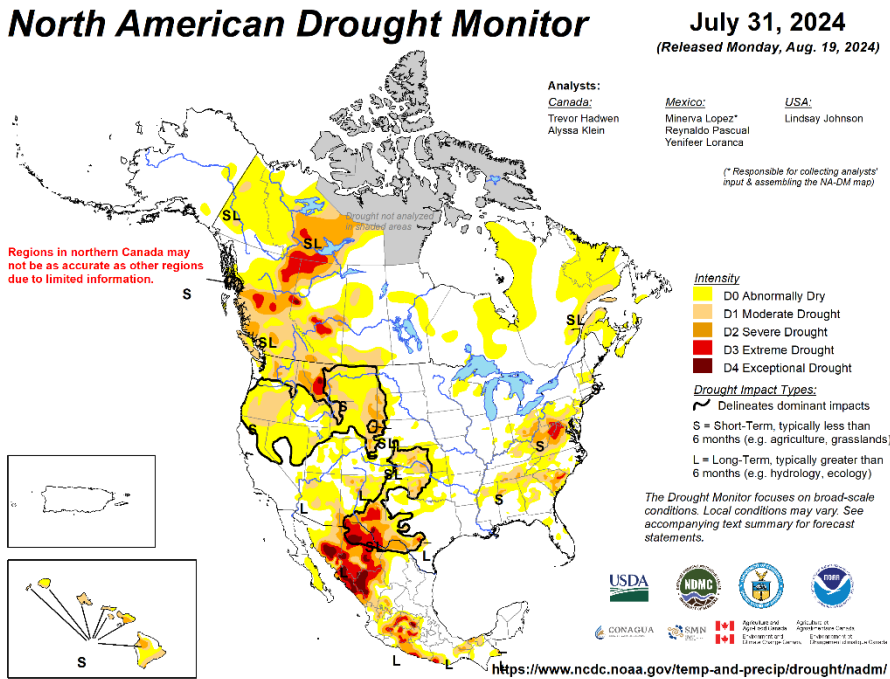


Figure 4e: North American Drought Monitor for August 31, 2024.

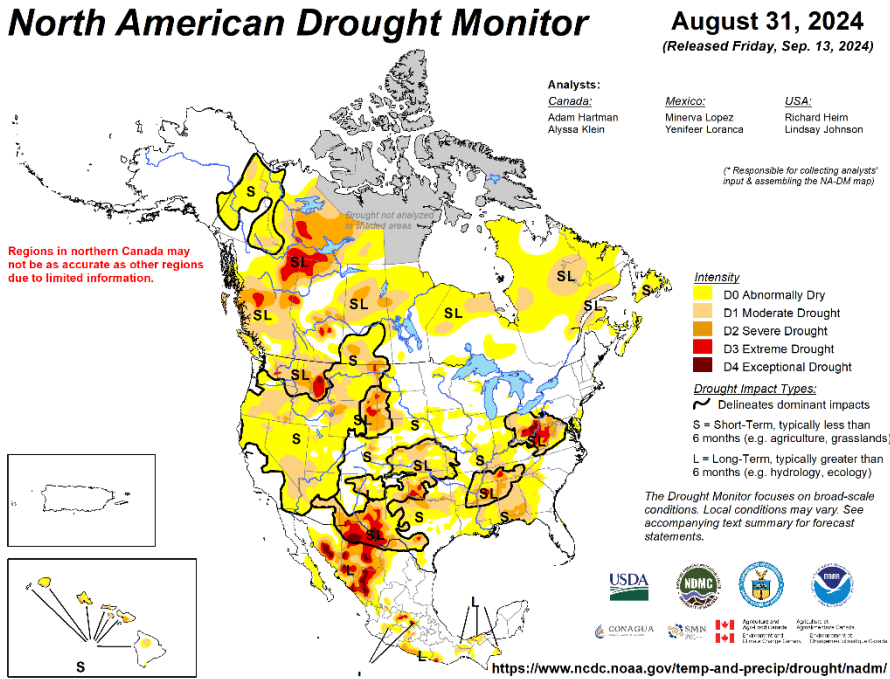
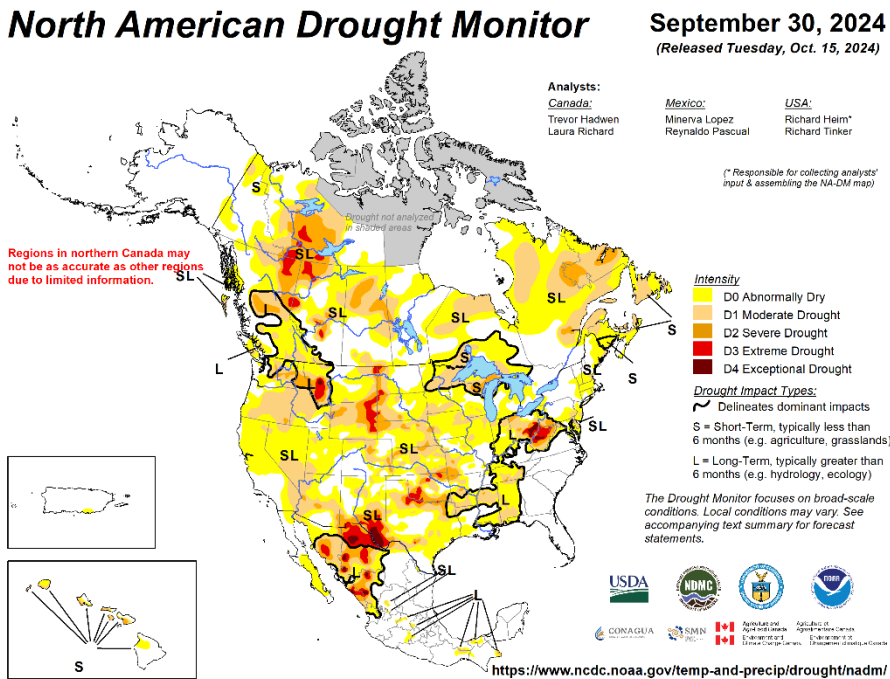


Figure 4f: North American Drought Monitor for September 30, 2024.



Description of wildfires

Southwest US wildfires – June 2022

Several fires were present over New Mexico and Arizona during the second week of June 2022 (Figure 5). The Pipeline fire west of Flagstaff, Arizona was particularly active on June 13, 2022, when the burn area rapidly expanded to over 20,000 acres. Heavy smoke can be seen coming from the fire on June 13, with smoke and haze already over Colorado (Figure 6). Forward trajectories from the fire show air parcels originating over the fire on June 13 over Minnesota on June 14 (Figure 7).

Figure 5: Large incident map for June 13, 2022, from the National Interagency Fire Center.

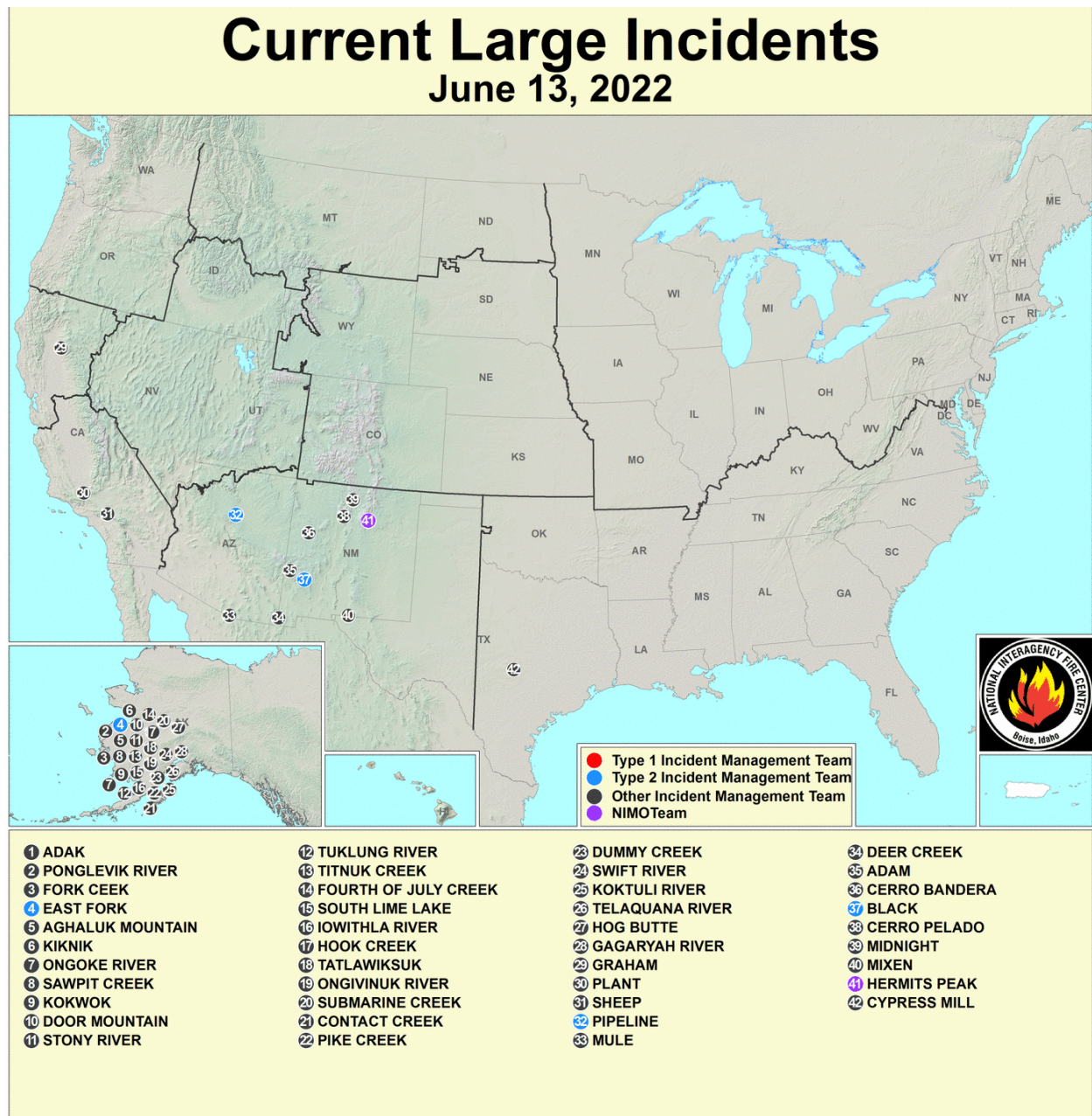


Figure 6: MODIS visible satellite for June 13, 2022, centered over the southwest US.

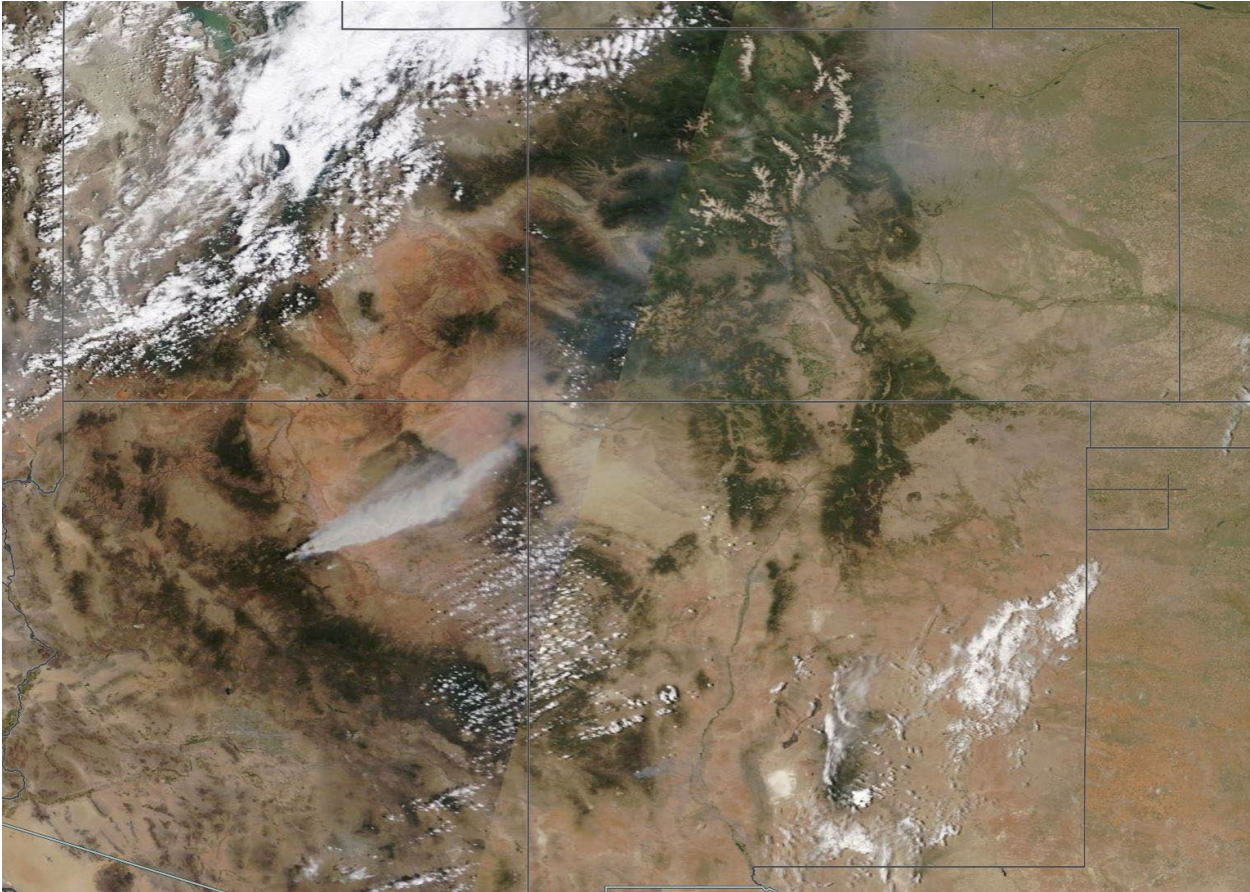
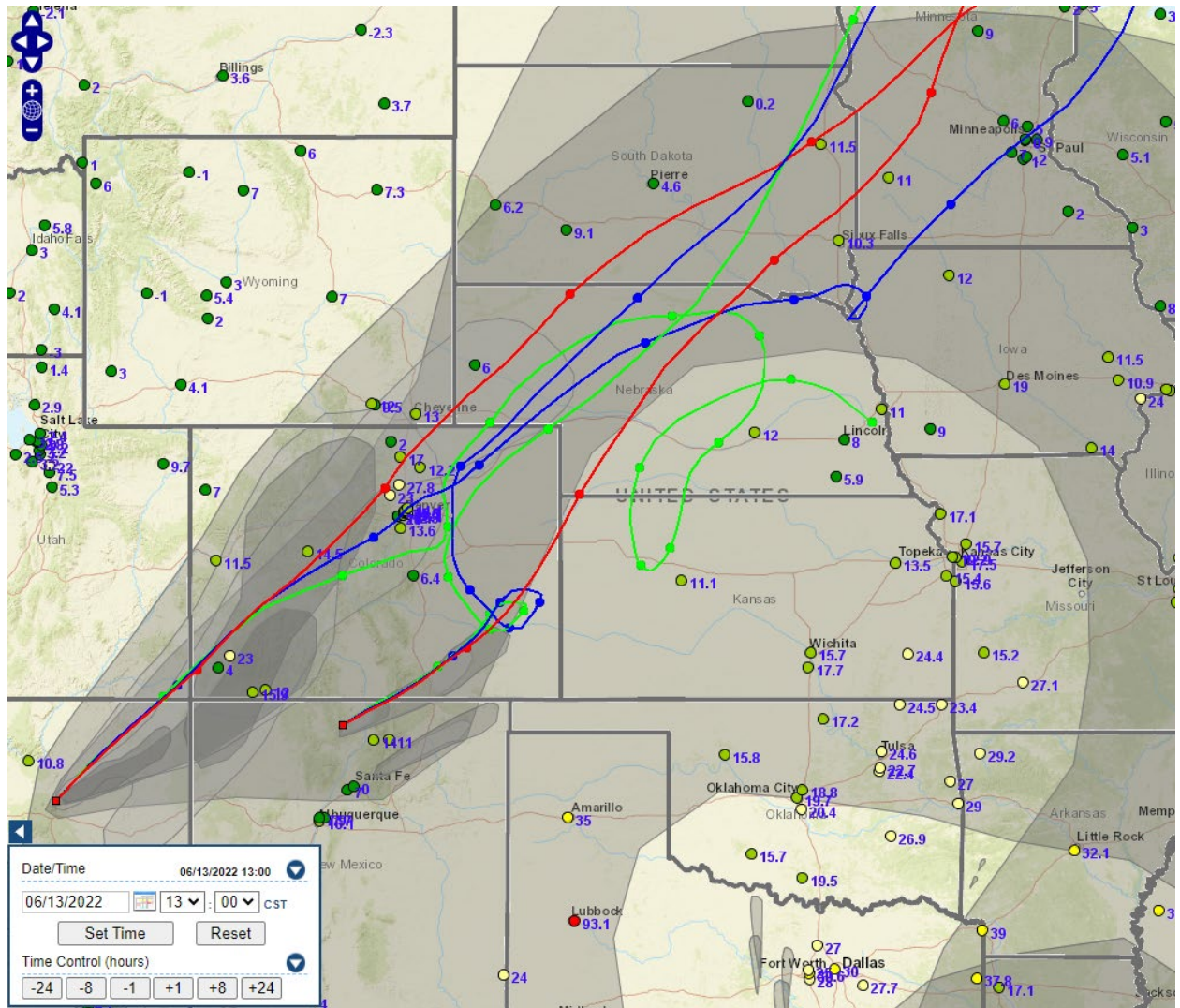


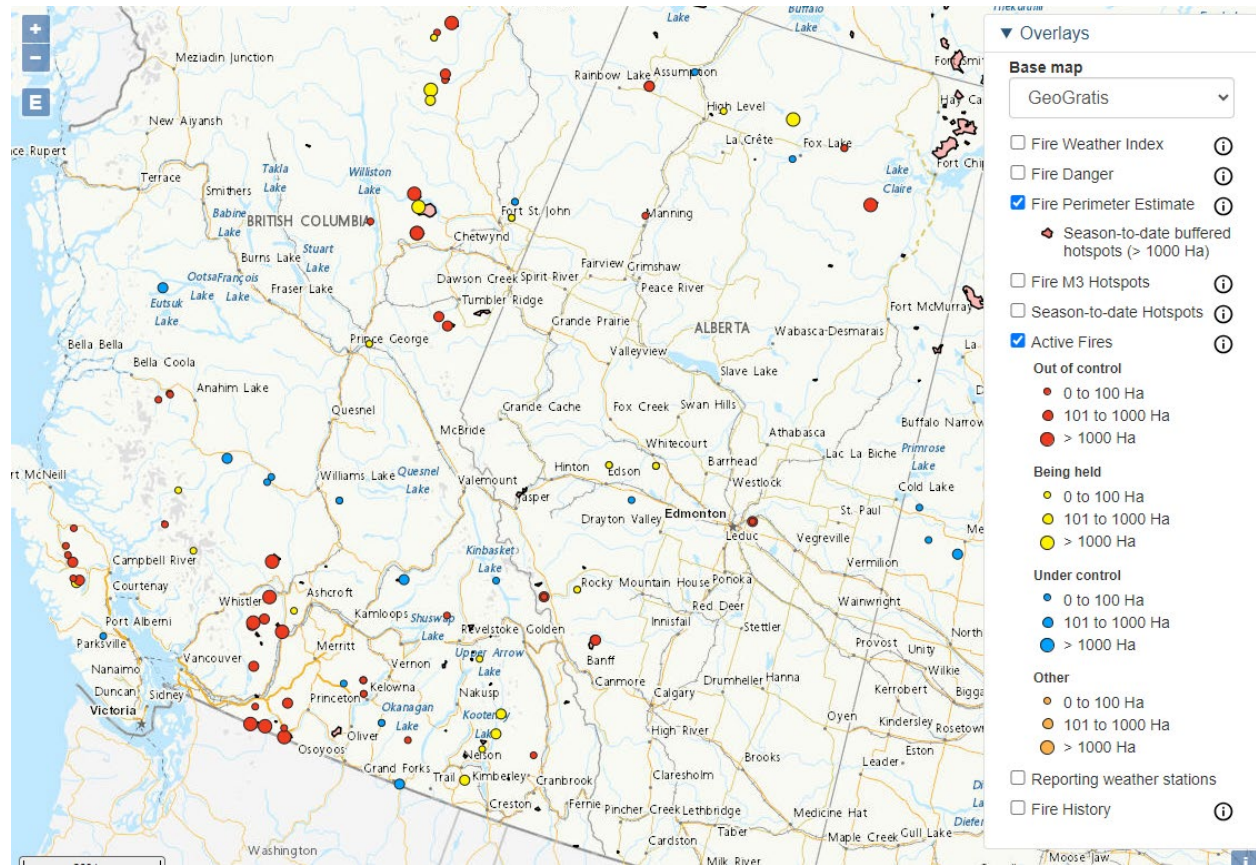
Figure 7: Forward trajectories originating from the southwest US on June 13, 2022.



Western Canada wildfires – October 2022

Several late season wildfires occurred in western Canada during October 2022. The map below shows fire locations on October 19, 2022 (Figure 8). Satellite images and backward trajectories showing impacts to Minnesota monitors are included in the daily fire impacts section.

Figure 8: Active fires and fire perimeters on October 19, 2022.



Canada wildfires – Summer 2023

The 2023 wildfire season easily set records for the number of hectares burned (Figure 9). High wildfire activity occurred across most of Canada, meaning that for much of the summer any wind with a northerly component transported wildfire smoke into Minnesota. Figure 10 shows the weekly wildfire activity, starting on May 15, 2023.

Figure 9: Number of Fires and Area burned in Canada from 1970 to 2023.

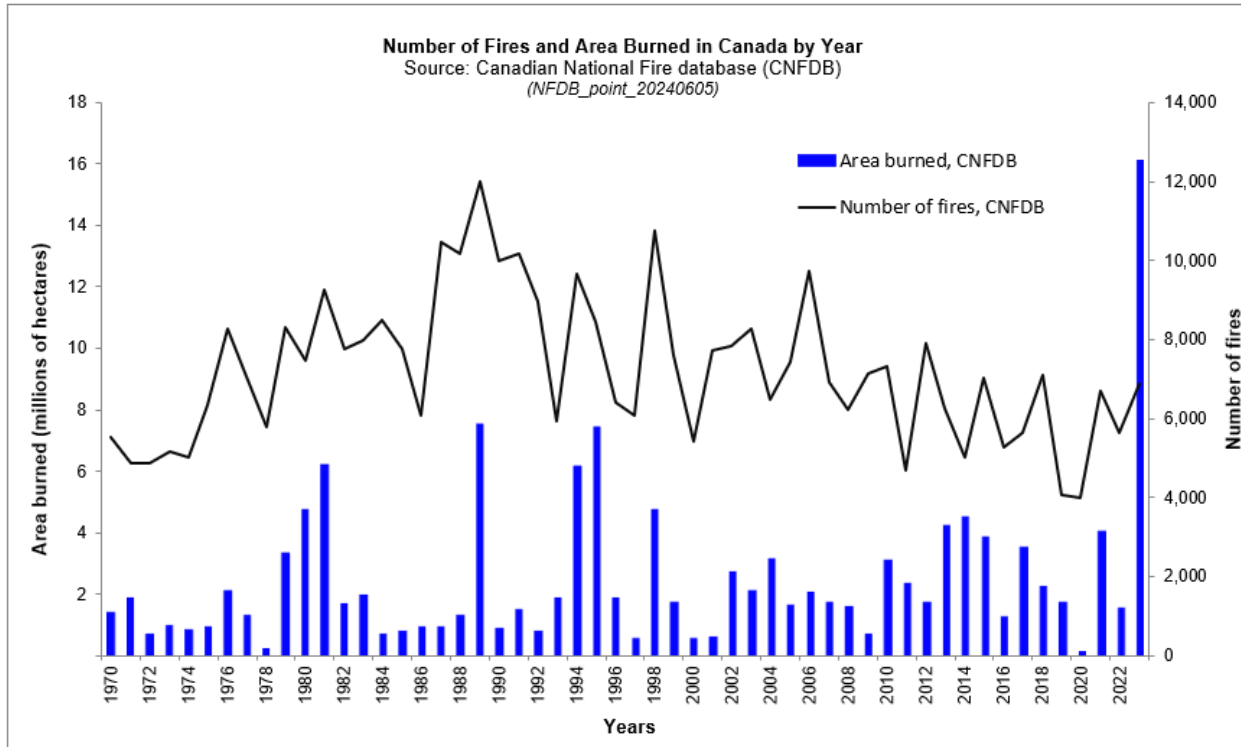


Figure 10a: Active fires and fire perimeters on May 15, 2023.

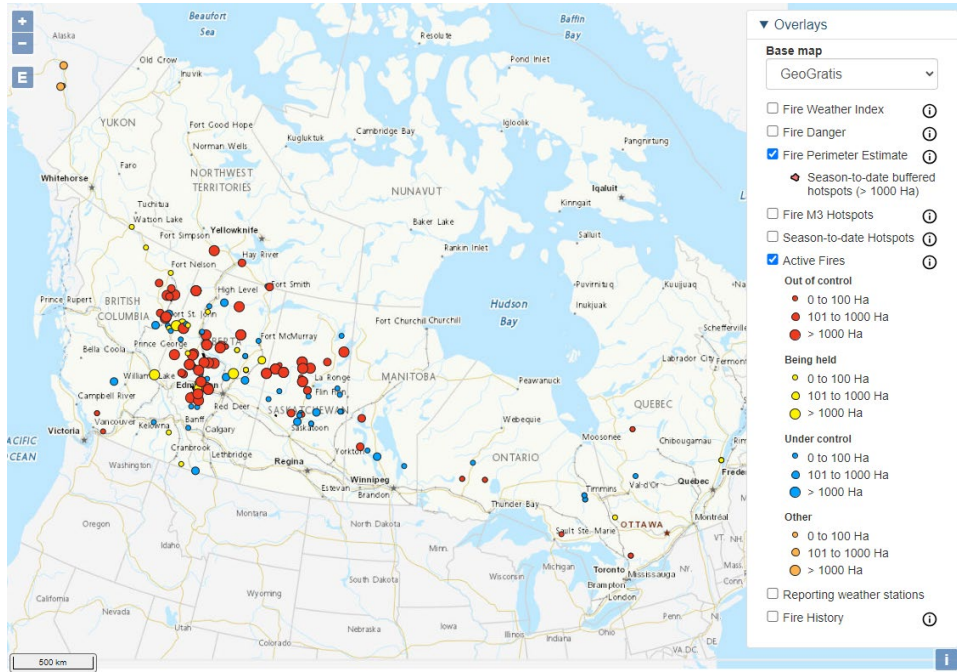


Figure 10b: Active fires and fire perimeters on May 22, 2023.

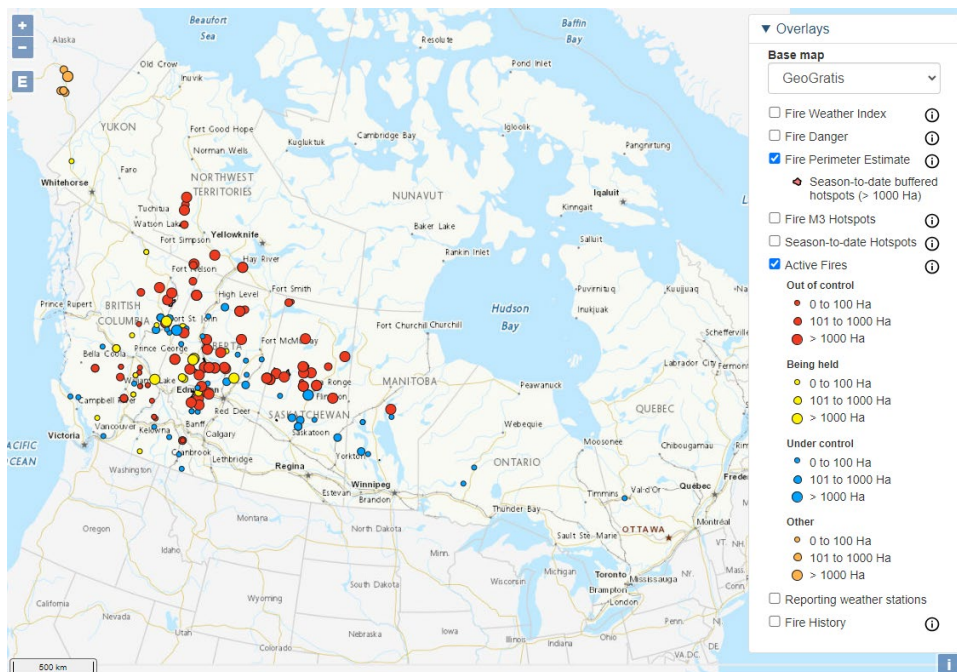


Figure 10c: Active fires and fire perimeters on May 29, 2023.

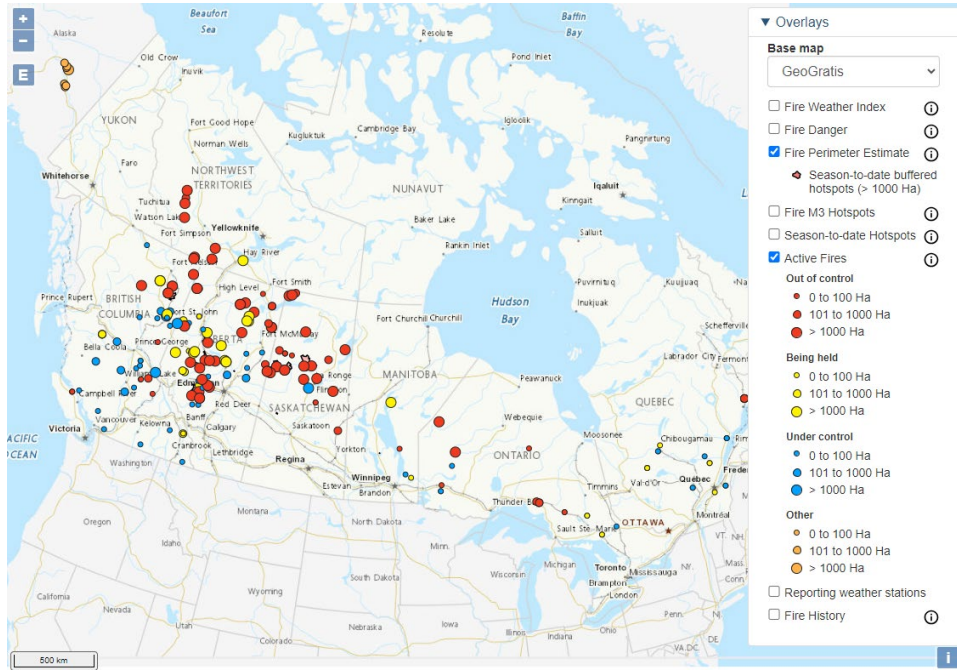


Figure 10d: Active fires and fire perimeters on June 5, 2023.

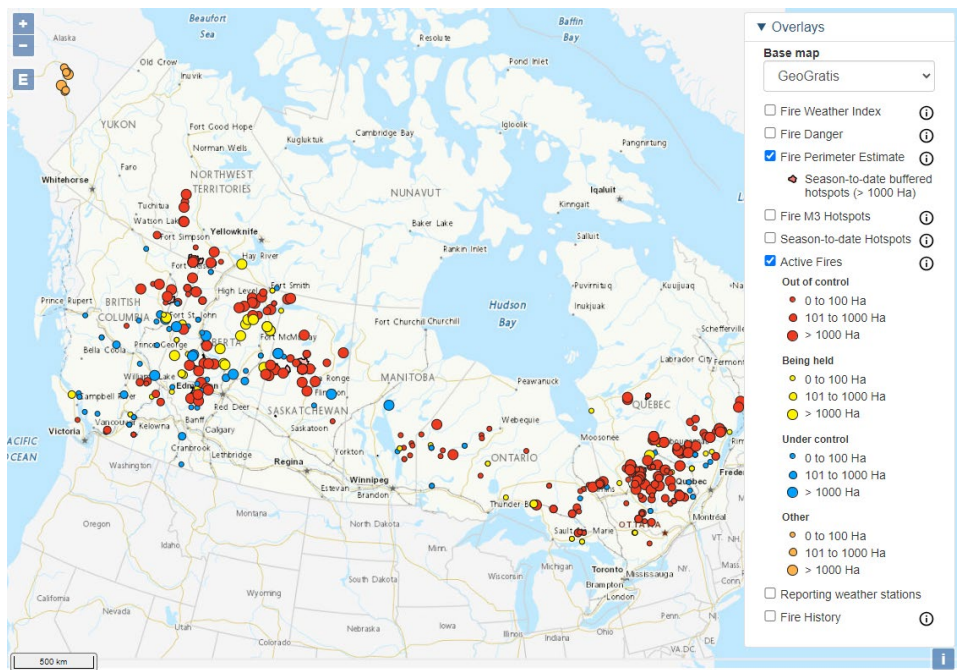


Figure 10e: Active fires and fire perimeters on June 12, 2023.

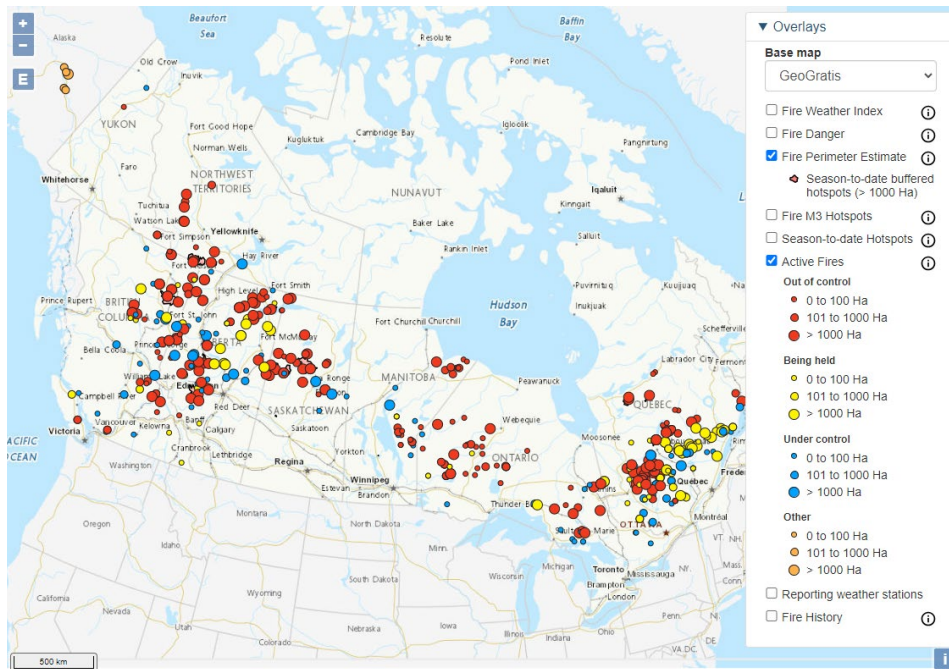


Figure 10f: Active fires and fire perimeters on June 19, 2023.

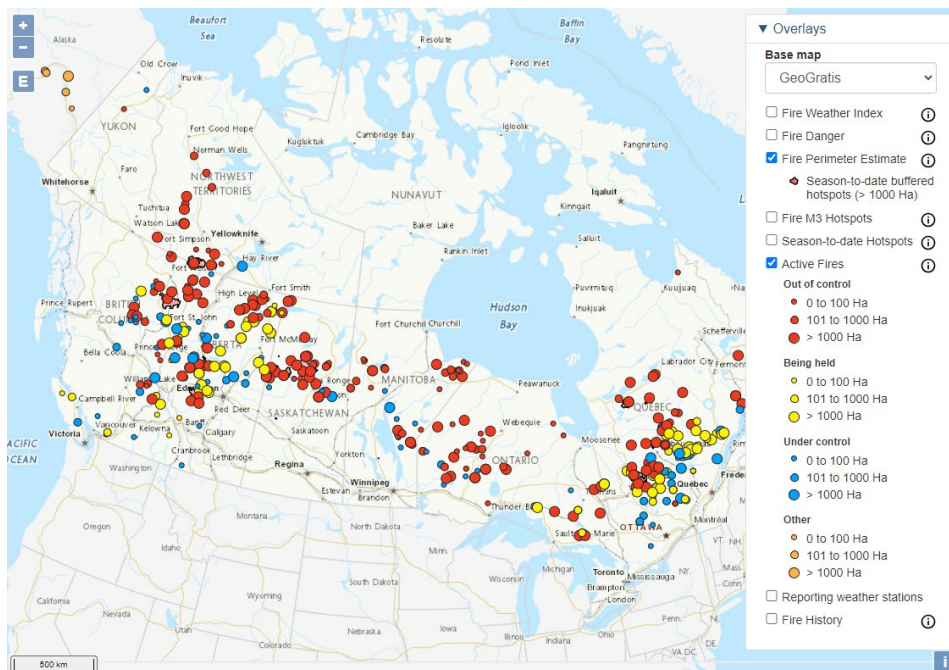


Figure 10g: Active fires and fire perimeters on June 26, 2023.

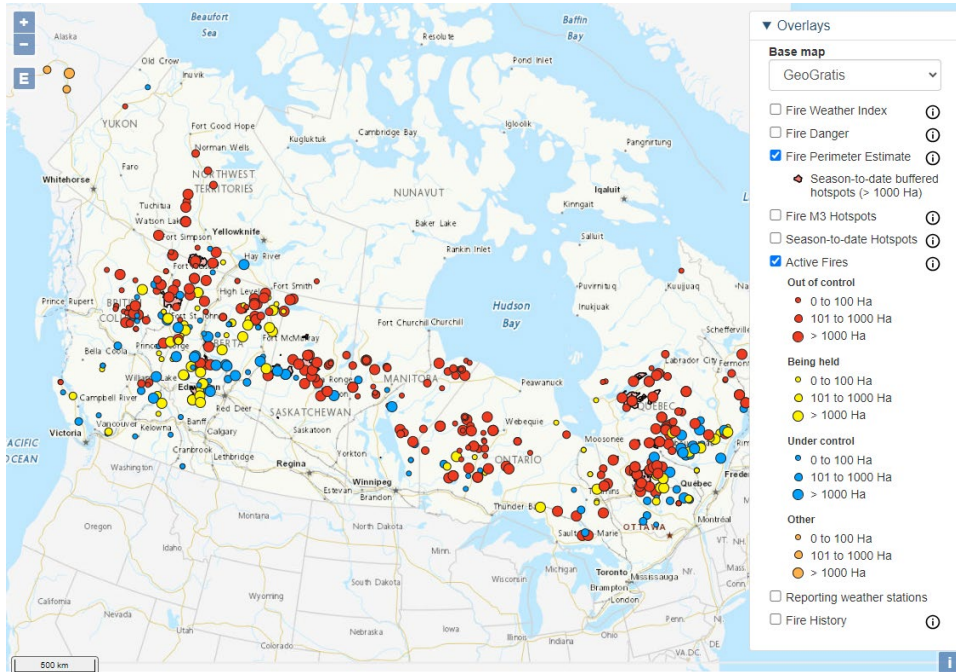


Figure 10h: Active fires and fire perimeters on July 3, 2023.

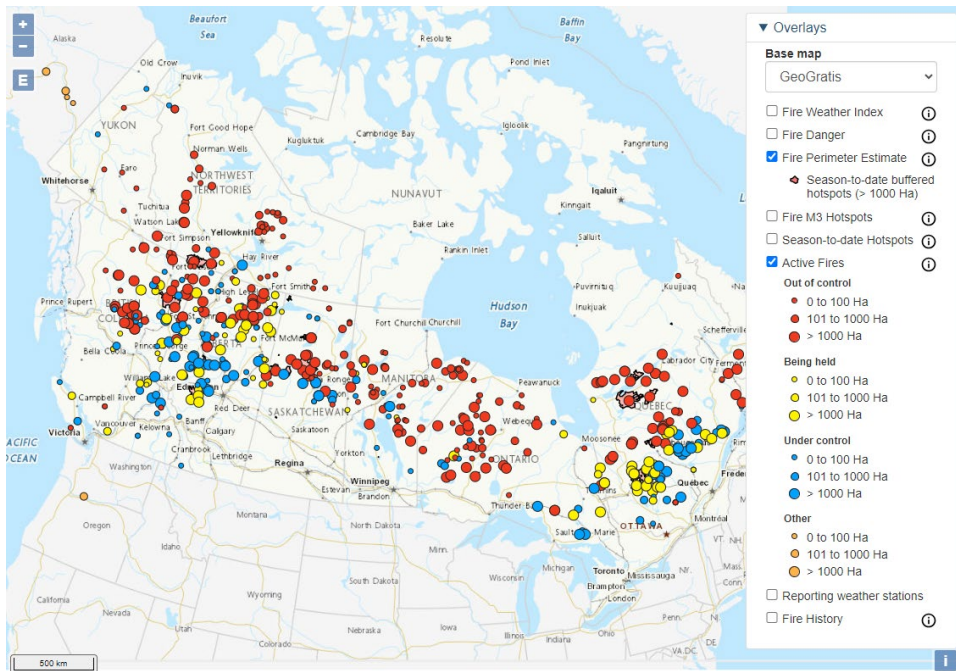


Figure 10i: Active fires and fire perimeters on July 10, 2023.

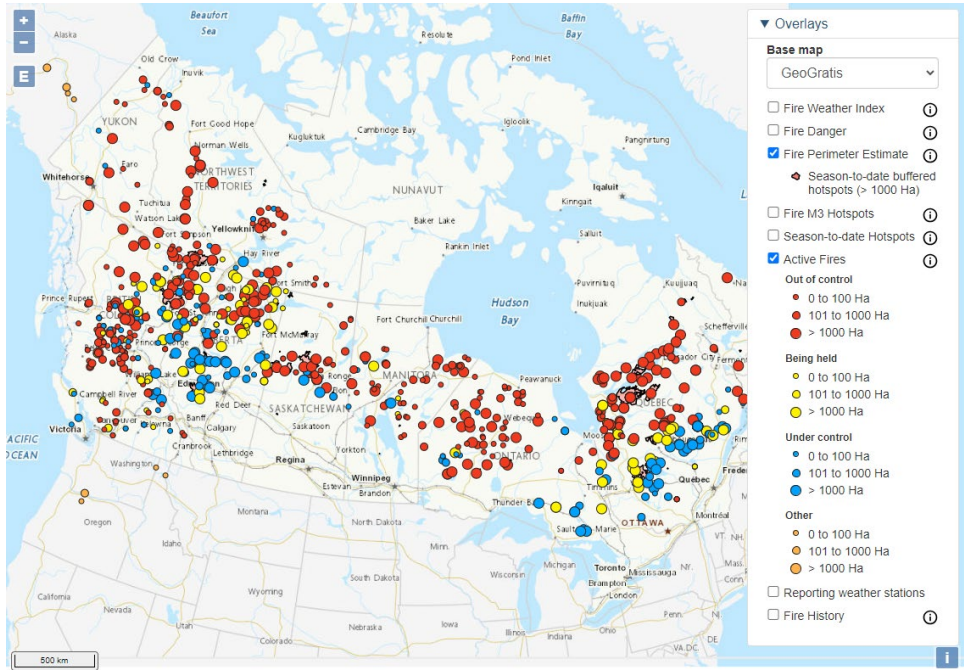


Figure 10j: Active fires and fire perimeters on July 17, 2023.

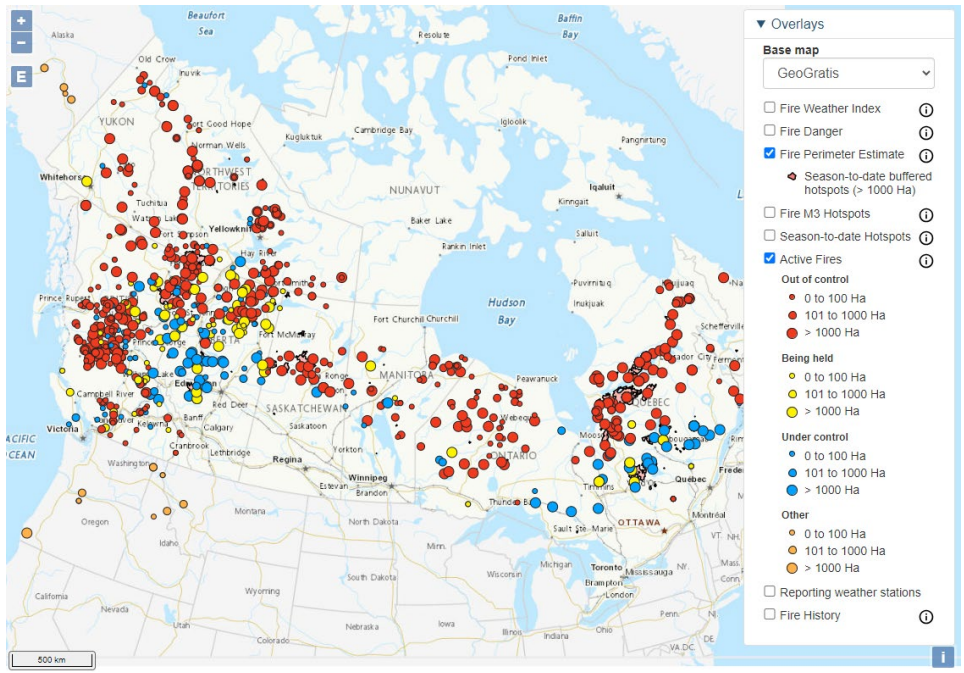


Figure 10k: Active fires and fire perimeters on July 24, 2023.

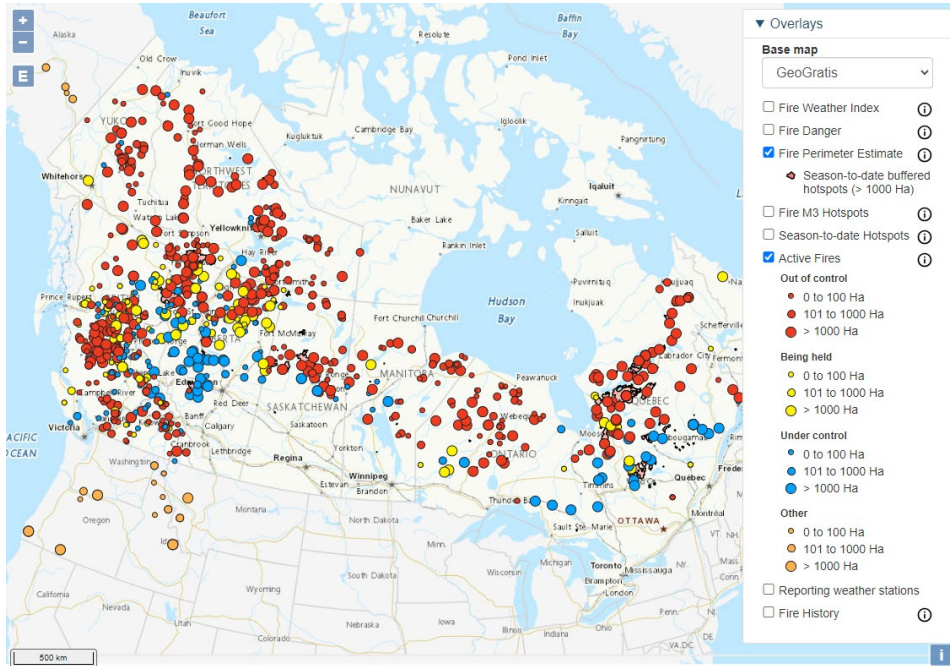


Figure 10l: Active fires and fire perimeters on July 31, 2023.

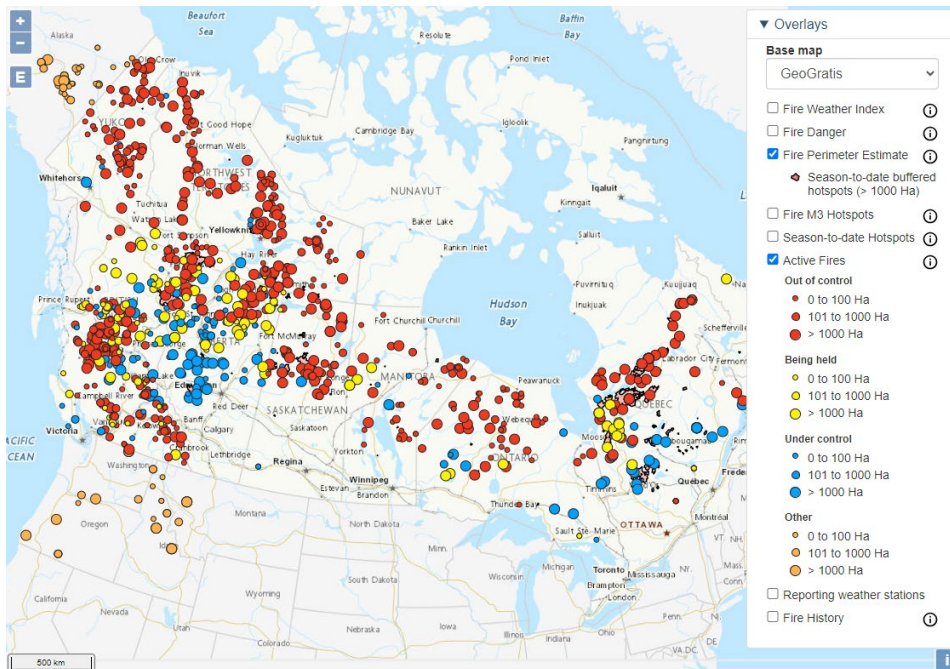


Figure 10m: Active fires and fire perimeters on August 7, 2023.

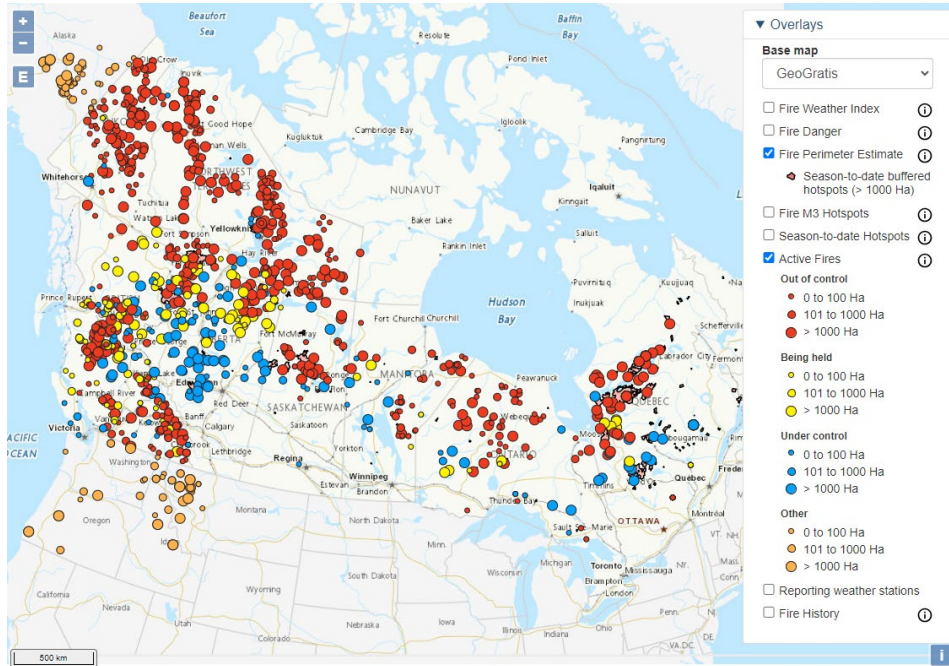


Figure 10n: Active fires and fire perimeters on August 14, 2023.

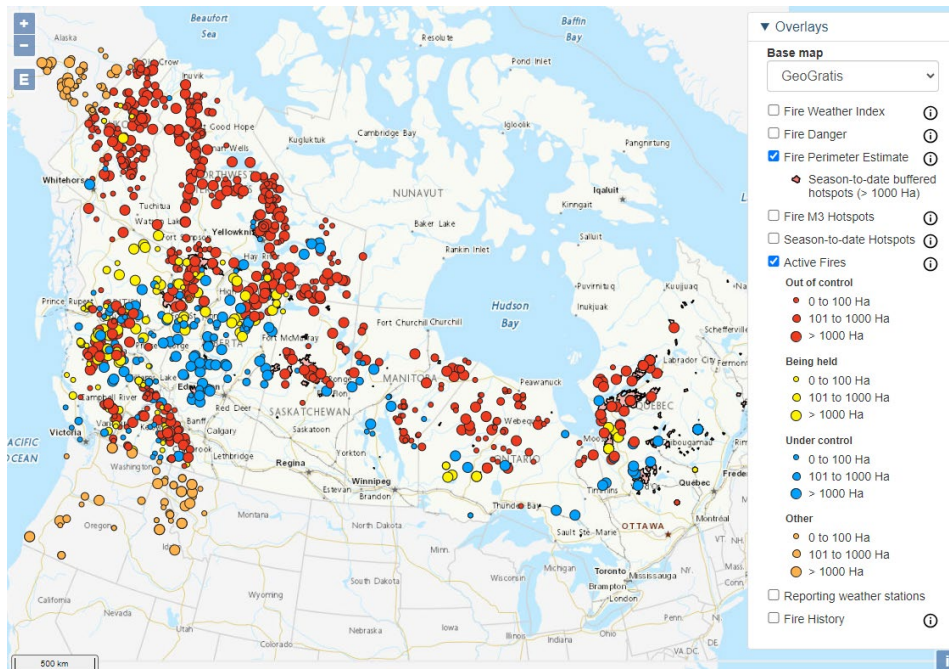


Figure 10o: Active fires and fire perimeters on August 21, 2023.

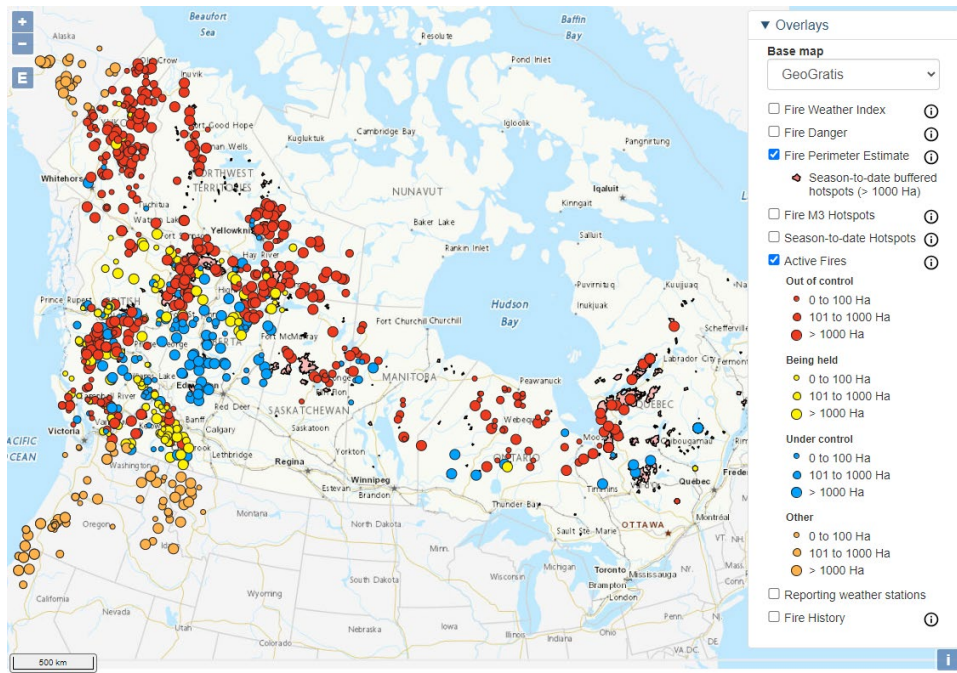


Figure 10p: Active fires and fire perimeters on August 28, 2023.

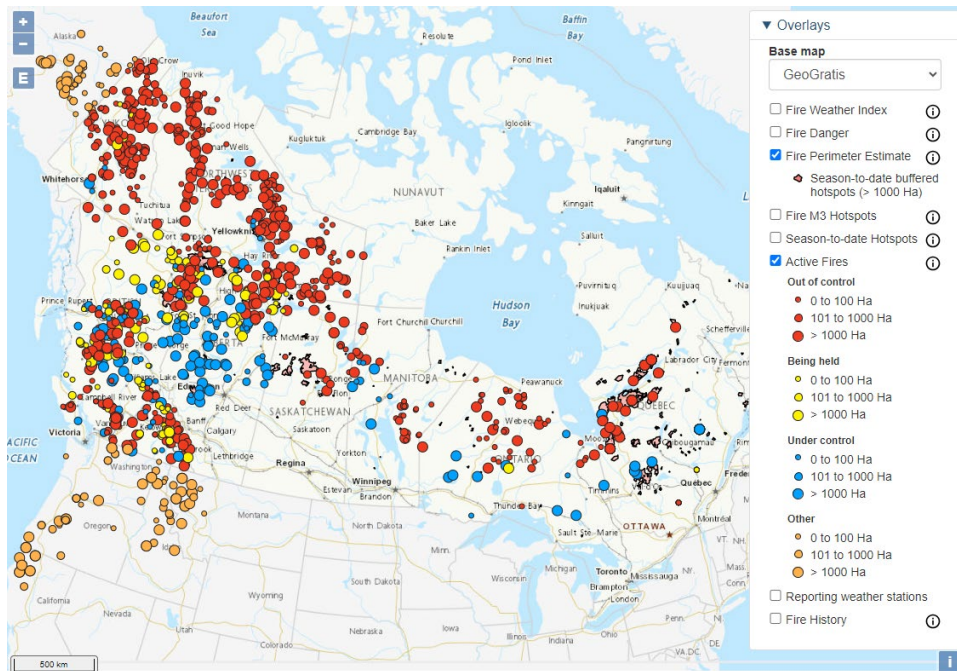


Figure 10q: Active fires and fire perimeters on September 4, 2023.

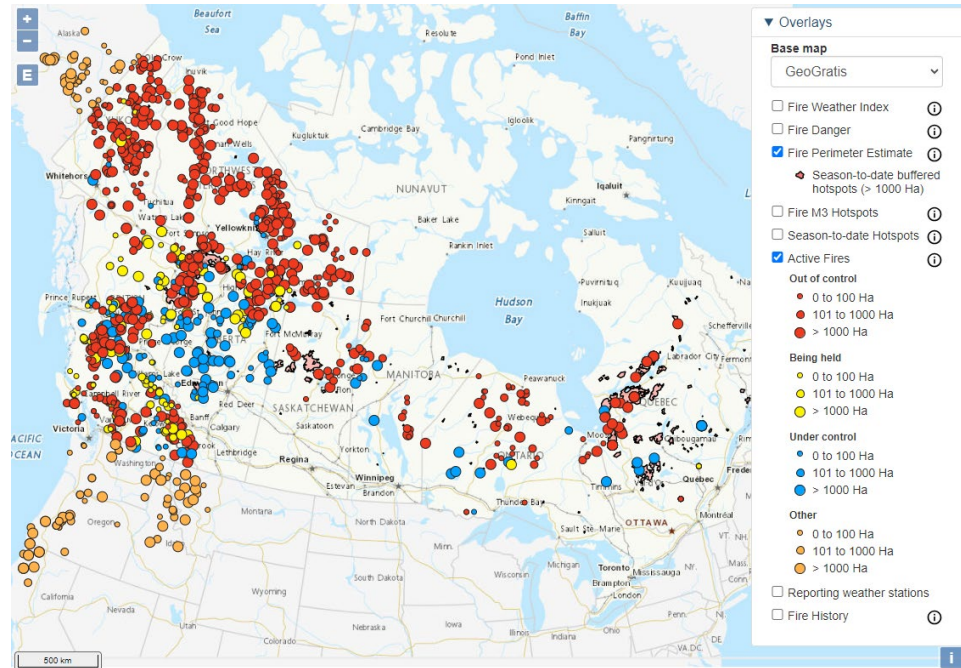


Figure 10r: Active fires and fire perimeters on September 11, 2023.

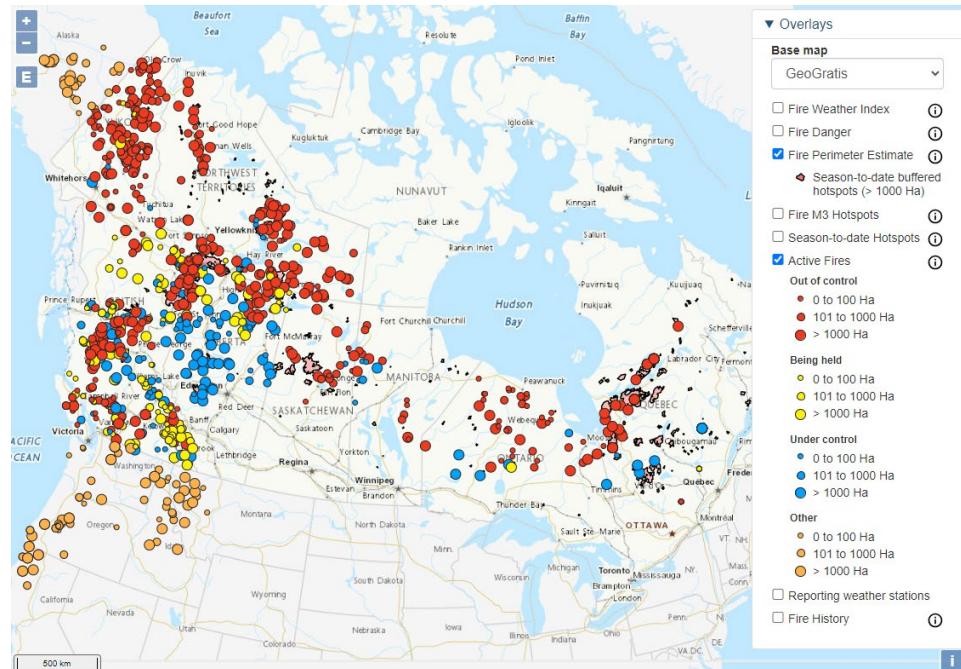
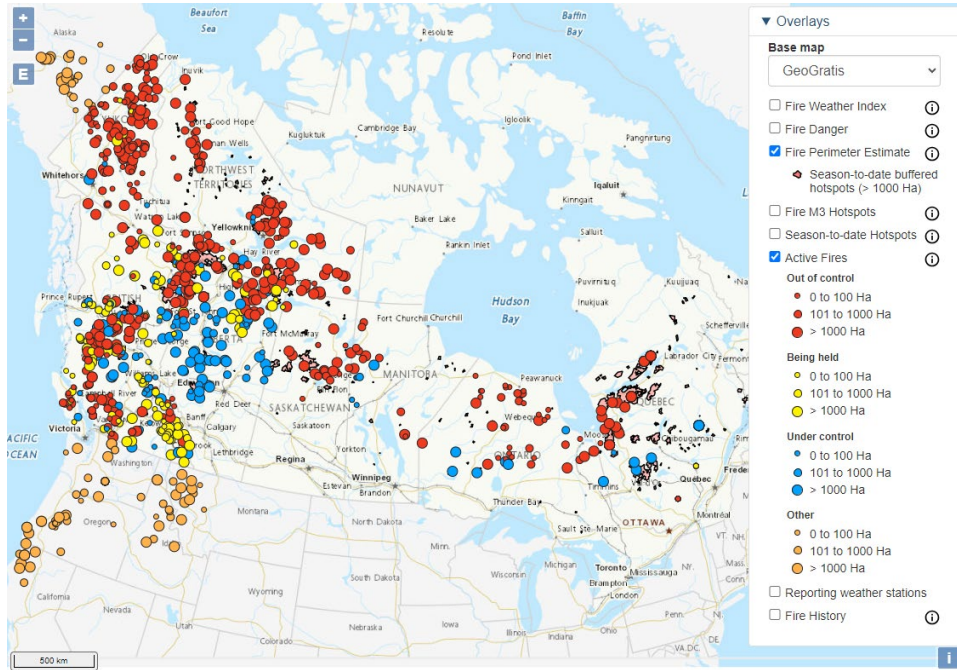


Figure 10s: Active fires and fire perimeters on September 18, 2023.



Canada wildfires – Summer 2024

The 2024 wildfire season had the second-greatest area burned since the year 2000, surpassed only by the hyperactive 2023 fire season (Figure 11). Wildfire activity during 2024 was confined to central and western Canada. Figure 12a shows the fire activity responsible for the mid-May 2024 wildfire event, then Figures 12b-l show the weekly wildfire activity starting on July 10, 2024.

Figure 11: Number of Fires and Area burned in Canada from 1970 to 2024.

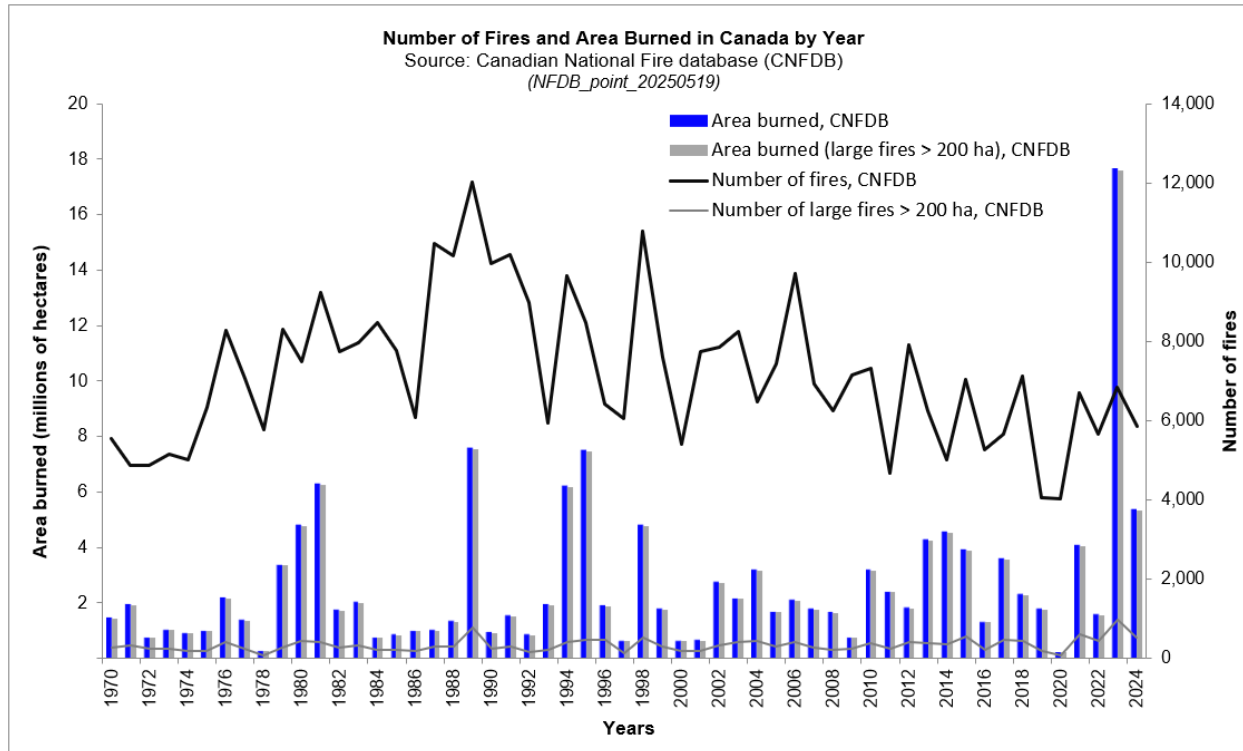


Figure 12a: Active fires and fire perimeters on May 10, 2024.

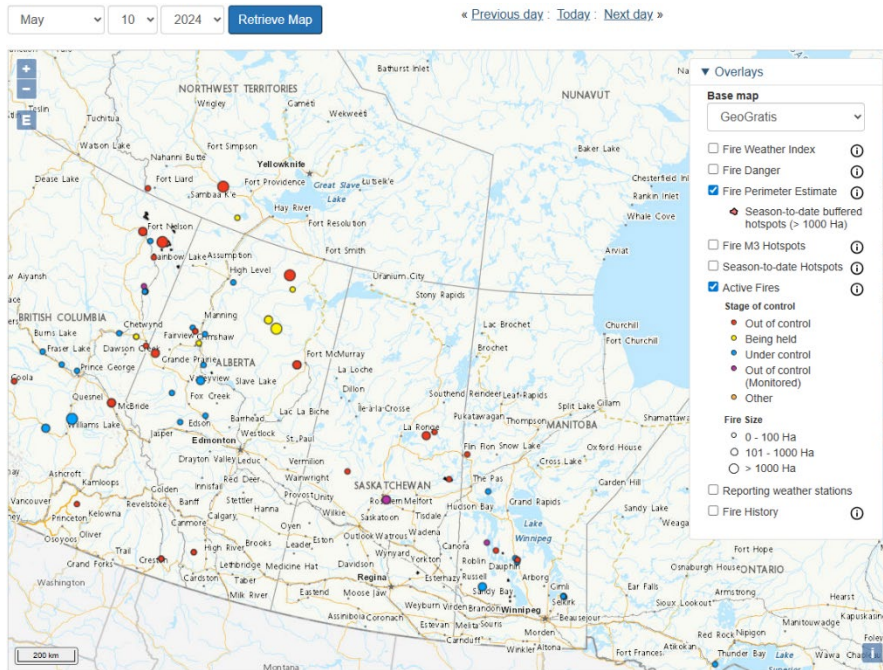


Figure 12b: Active fires and fire perimeters on July 5, 2024.

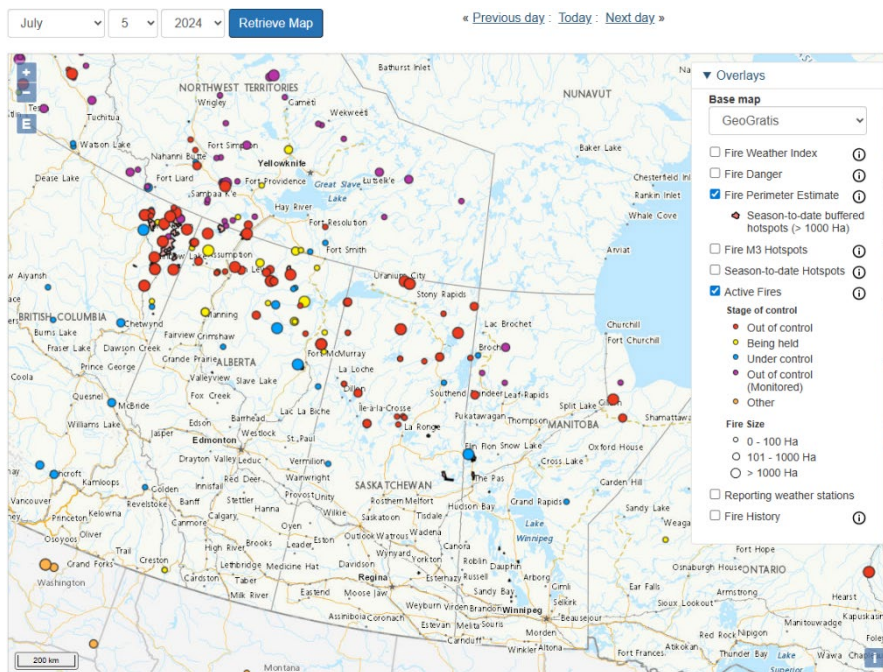


Figure 12c: Active fires and fire perimeters on July 12, 2024.

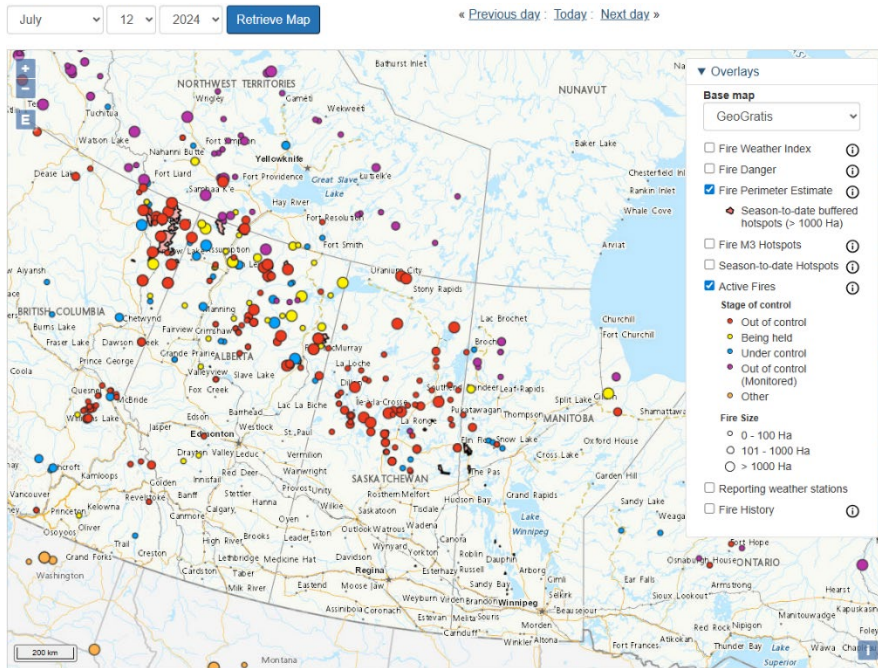


Figure 12d: Active fires and fire perimeters on July 19, 2024.

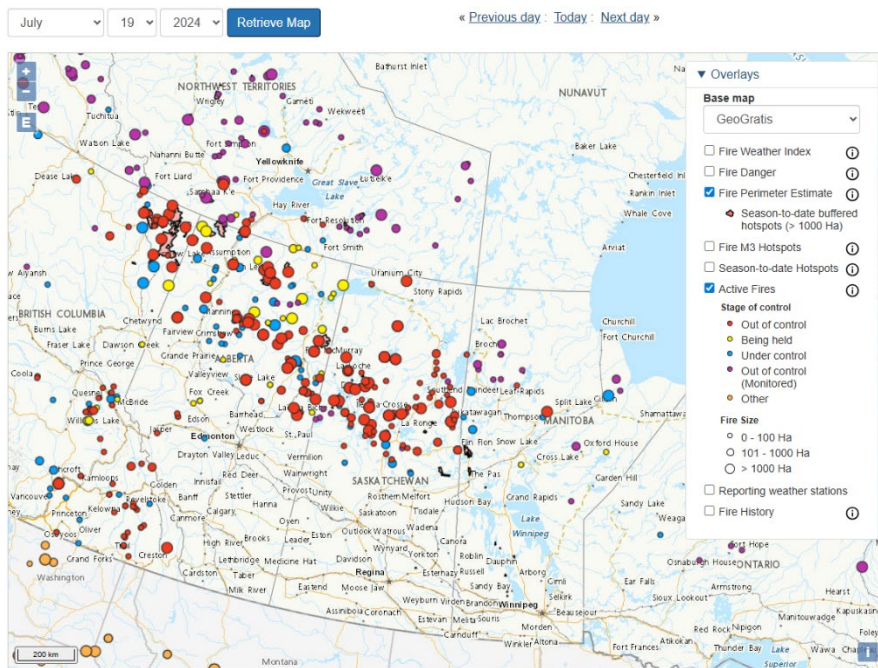


Figure 12e: Active fires and fire perimeters on July 26, 2024.

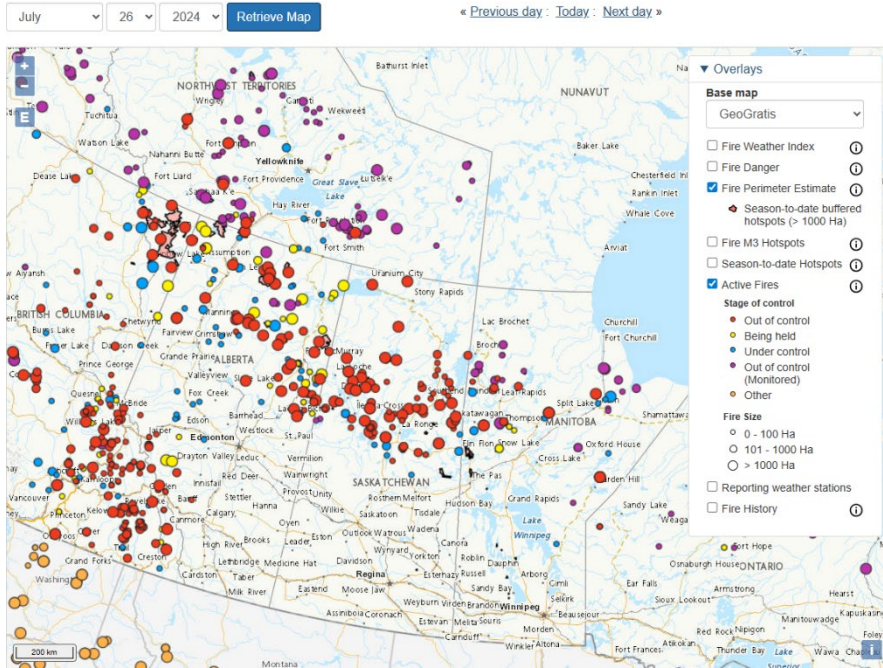


Figure 12f: Active fires and fire perimeters on August 2, 2024.

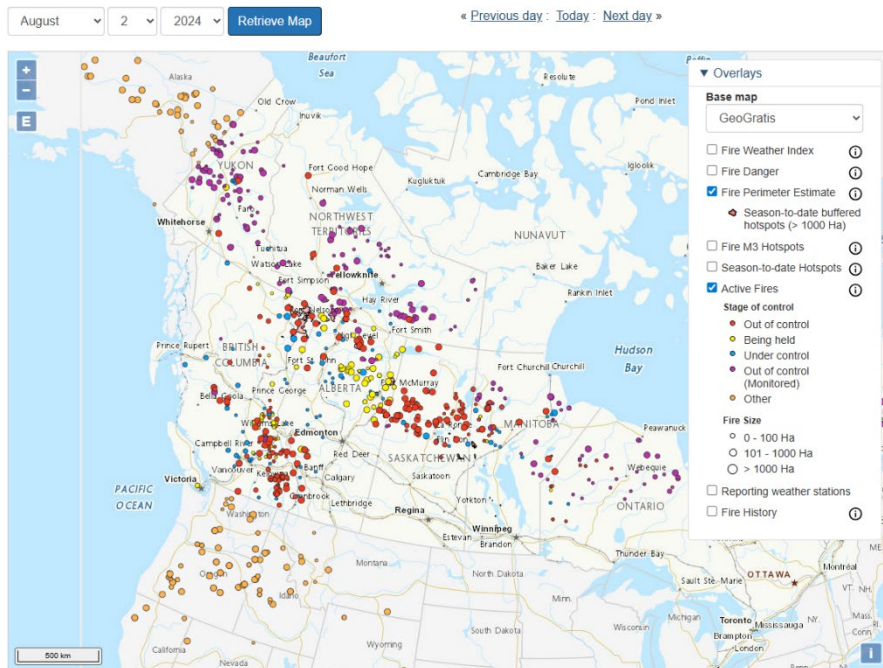


Figure 12g: Active fires and fire perimeters on August 9, 2024.

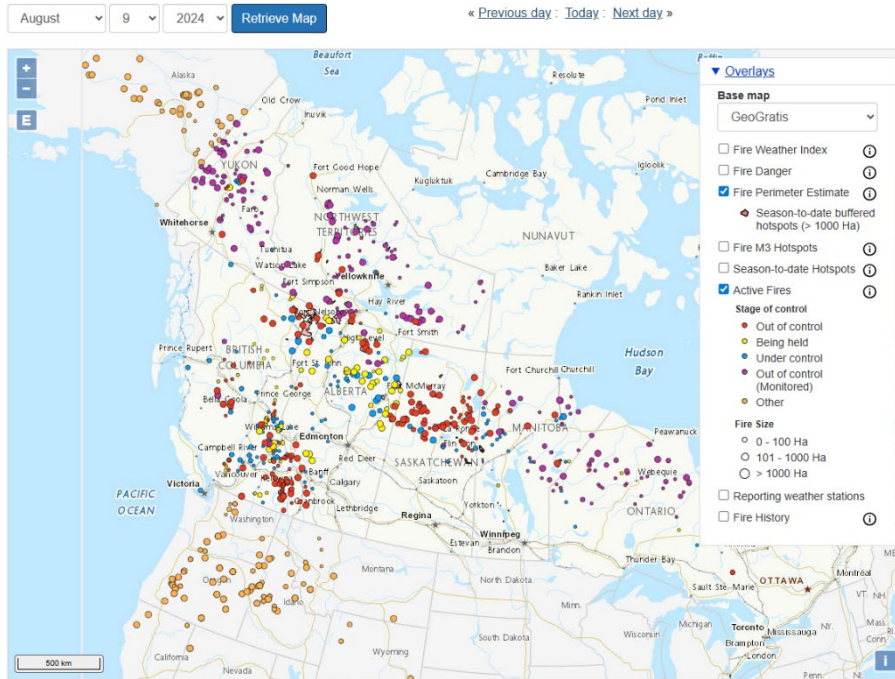


Figure 12h: Active fires and fire perimeters on August 16, 2024.

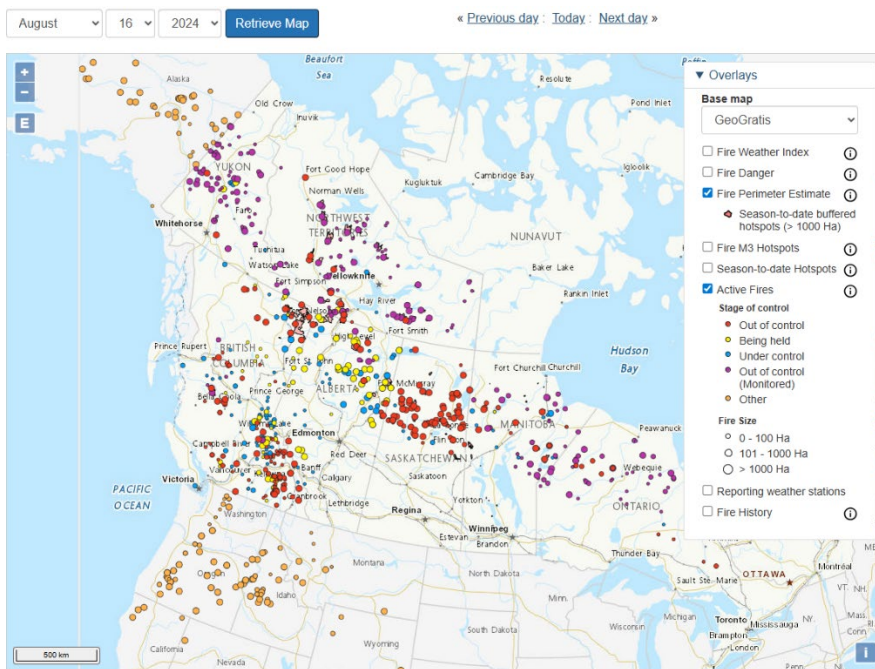


Figure 12i: Active fires and fire perimeters on August 23, 2024.

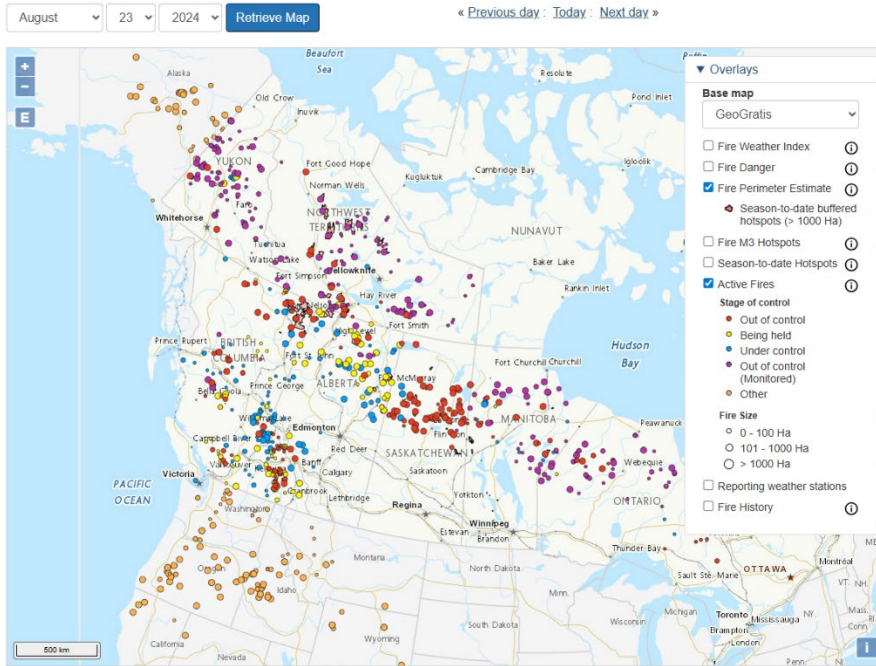


Figure 12j: Active fires and fire perimeters on August 30, 2024.

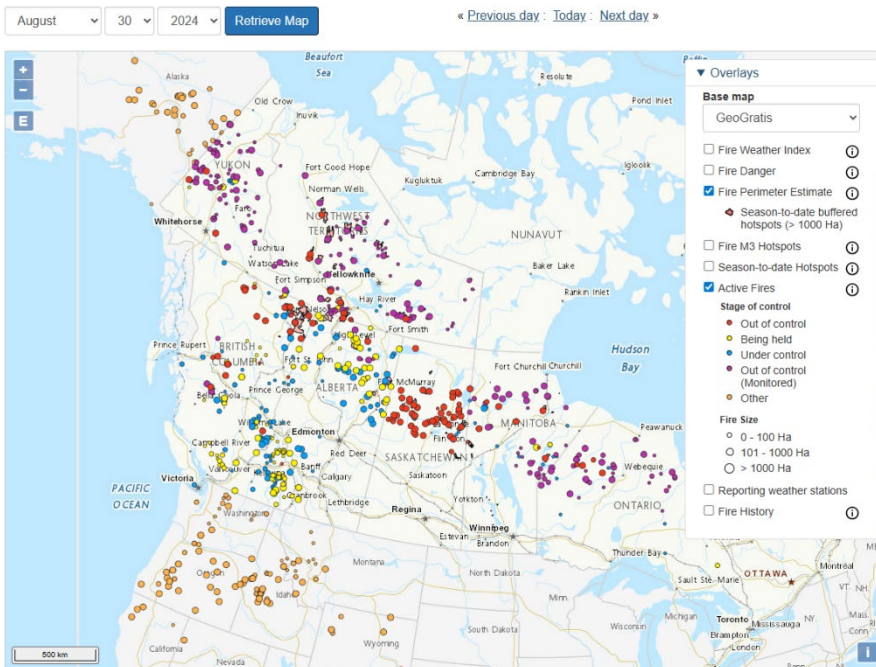


Figure 12k: Active fires and fire perimeters on September 6, 2024.

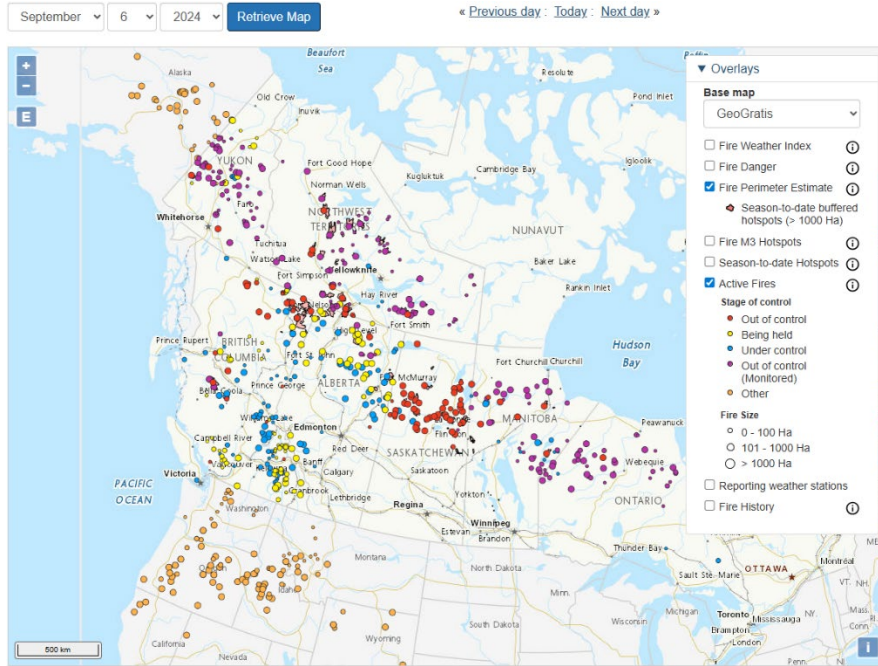
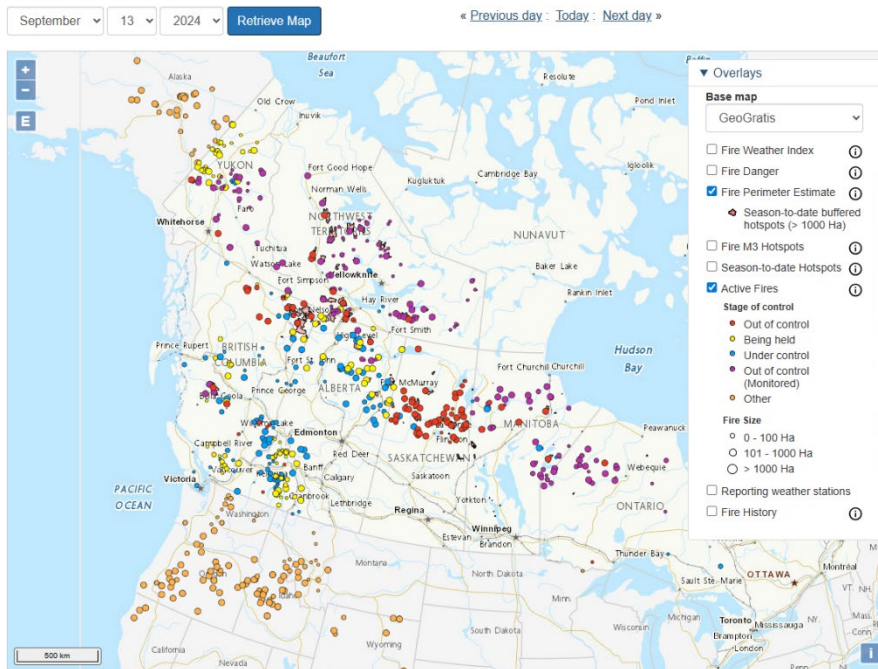


Figure 12l: Active fires and fire perimeters on September 13, 2024.



Outlier identification

In this section we present two methods for identifying thresholds for considering outliers. The first method was developed by the United States Environmental Protection Agency (EPA) to determine a tiering threshold concentration for exceptional event analysis. Tier 1 wildfire events that are greater than or equal to 1.5 times the tiering threshold have obvious and unambiguous impacts from wildfire smoke and require less evidence to establish a clear causal relationship. Tier 2 wildfire events are above the tiering threshold but below the Tier 1 threshold, and require more evidence to establish a causal relationship. The second method uses the Interquartile Range (IQR) to determine a threshold concentration for outliers.

EPA tiering thresholds for exceptional event analyses

The EPA has developed a tiering methodology to determine the amount of evidence needed to establish a clear causal relationship in a wildland fire PM_{2.5} exceptional events demonstration. Most of the days identified in this document fall within the Tier 1 category, with the remainder falling within Tier 2. The tiering thresholds are:

1. Based on the most recent, complete 5-year period 2020-2024. This tool does not have a minimum data completeness requirement. If a site has less than five years of data, please work with the corresponding EPA regional office to determine the appropriate tiering analysis.
2. Calculated at the site level. Specifically, we use site-level aggregated daily values consistent with PM_{2.5} NAAQS data handling [see section 3.0(d)]. For identifying which site-days to exclude from the tier threshold calculations, we consider the raw data record for all monitors at a site. If any hour of the day at any monitor at the site has an R (Request Exclusion) flag or a fire-related I (Informational) flag, then we exclude the site-level aggregated daily value from the tier threshold calculations. Fire-related I flags include IT (Wildfire - U.S.), IF (Fire - Canadian), IG (Fire - Mexico/Central America), IH (Fireworks), IM (Prescribed Fire), and IP (Structural Fire).
3. Based on the lesser value of either (a) the most recent 5-year month-specific 98th percentile for 24-hour PM_{2.5} data, or (b) the minimum annual 98th percentile for 24-hour PM_{2.5} data for the most recent 5-year period with all R flagged and fire-related I flagged days excluded. Tier 1 demonstrations are appropriate for 24-hour PM_{2.5} greater than or equal to 1.5 times the threshold determined above, Tier 2 demonstrations are appropriate for 24-hour PM_{2.5} greater than or equal to the threshold but less than 1.5 times the threshold, and Tier 3 demonstrations are appropriate for 24-hour PM_{2.5} less than the threshold. See the PM_{2.5} Wildland Fire Exceptional Events Tiering Document for further details.

Table 9: Maximum tiering thresholds for the months of April-October for each PM_{2.5} monitor location in Minnesota. The vast majority of wildfire smoke occurs between April-October.

Monitor name	AQS	April-October maximum monthly tier 2 threshold	April-October maximum monthly tier 1 threshold
Apple Valley	270370470	14.5	21.8
Blaine	270031002	14.9	22.4
Brainerd	270353204	11.7	17.5

Monitor name	AQS	April-October maximum monthly tier 2 threshold	April-October maximum monthly tier 1 threshold
Detroit Lakes	270052013	13.1	19.7
Duluth-WDSE	271377550	12	18.0
Ely	270750005	10.1	15.1
Fargo NW	380171004	11.9	17.9
Fond du Lac	270177417	7.4	11.1
Grand Portage	270317810	7	10.5
Lakeville – Near Road	270370480	14.5	21.8
Leech Lake Nation	270213410	12.5	18.8
Marshall	270834210	13.1	19.7
Minneapolis-Anderson	270530963	17.6	26.4
Minneapolis-Bottineau	270532006	19.1	28.7
Minneapolis-Near Road	270530962	16.8	25.2
Minneapolis-Phillips	270531904	20	30.0
Red Lake Nation	270072304	11.3	17.0
Rochester	271095008	15.4	23.1
Shakopee	271390505	14.1	21.2
St. Cloud	271453052	13.7	20.5
St. Michael	271713201	14.4	21.6
St. Paul-Harding	271230871	16.5	24.8
St. Paul-Ramsey	271230868	16.7	25.0
Virginia	271377001	10.3	15.5
West Duluth	271377554	12.2	18.3

Interquartile Range (IQR)

For each monitor, outliers were identified based on data for the months of April-October from 2015 to 2024. The period spanning April to October is typically when smoke impacts occur in Minnesota, and is outside the cool season when nitrate-driven particulate events occur in Minnesota. All data that passed quality assurance was included. High outliers are defined as concentrations greater than the third quartile (Q3) plus 1.5 times the first-third quartile (or interquartile) range. These values are often shown as outliers on statistical box plots. The IQR method is commonly used to identify outliers for skewed datasets such as ambient air quality data. Most of the days flagged for wildfire smoke impacts had concentrations exceeding the IQR outlier threshold.

Table 10: Outlier thresholds using the interquartile range based on data for the months of April-October spanning 2015 to 2024.

Site	AQS	Days	Mean	Median	Q1	Q3	IQR	Outlier threshold*
Apple Valley	270370470	2032	6.8	5.4	3.6	8.2	4.6	15.1
Blaine	270031002	2089	6.2	5.1	3.3	7.5	4.2	13.8
Brainerd	270353204	2055	5.9	4.6	2.8	6.9	4.1	13.1
Detroit Lakes	270052013	2076	6.4	4.5	2.7	7.5	4.8	14.8
Duluth-WDSE	271377550	1132	5.4	4.4	1.7	7.0	5.3	15.0
Ely	270750005	2030	5.1	3.8	2.3	5.9	3.6	11.3
Fargo NW	380171004	2063	7.9	6.2	4.0	9.3	5.3	17.3
Fond du Lac	270177417	1988	4.5	3.4	1.6	5.7	4.1	11.9
Grand Portage	270317810	1814	3.9	3.0	1.5	5.0	3.5	10.3
LACROSSE DOT	550630012	1478	7.3	6.0	4.4	8.4	4.0	14.4
Lakeville - Near Road	270370480	2101	6.9	5.8	4.0	8.3	4.3	14.8
Leech Lake Nation	270213410	1457	7.4	5.5	3.0	9.0	6.0	18.0
Marshall	270834210	2072	6.5	5.0	3.2	7.4	4.2	13.7
Minneapolis - Andersen School	270530963	2032	7.6	6.4	4.4	9.2	4.8	16.4
Minneapolis - Bottineau	270531909	298	7.0	6.4	4.2	8.6	4.4	15.2
Minneapolis - East Phillips	270531904	189	8.0	6.6	4.6	10.1	5.5	18.4
Minneapolis - Near Road	270530962	2106	7.0	5.8	4.0	8.4	4.4	15.0
Red Lake Nation Hospital	270072304	2062	6.0	4.0	2.7	6.0	3.3	11.0
Rochester	271095008	2059	6.8	5.5	3.5	8.4	4.9	15.8
Shakopee	271390505	1283	7.4	6.1	3.8	8.9	5.1	16.6
St. Cloud	271453052	1988	6.4	4.9	3.2	7.4	4.2	13.7
St. Michael	271713201	2052	6.6	5.2	3.4	7.7	4.3	14.2
St. Paul-Harding	271230871	2064	7.1	5.9	3.9	8.6	4.7	15.7
Virginia	271377001	2089	5.5	4.2	2.5	6.4	3.9	12.3
West Duluth	271377554	2017	5.4	4.2	2.5	6.6	4.1	12.8

*Outlier threshold = $Q3+1.5*IQR$

Wildfire smoke impacts

2022

For 2022, there were 4 days with high smoke impacts (Table 11). Smoke from wildfires in the southwest United States (US) impacted Minnesota monitors on June 14, and a combination of smoke from wildfires in western Canada and prescribed fires in southern Saskatchewan, Manitoba, and North Dakota impacted Minnesota monitors from October 20 to October 22. Daily satellite imagery, fire locations, and monitor data for each day from 2022 identified in Table 11 can be found in Appendix A.

Table 11: List of days for 2022 when 24-hour PM_{2.5} concentrations were influenced by wildfire smoke.

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	6/14/2022	14.96	27	Smoke from southwest US wildfires
Blaine	270031002	6/14/2022	16.71	30	Smoke from southwest US wildfires
Brainerd	270353204	6/14/2022	15.63	34	Smoke from southwest US wildfires
Detroit Lakes	270052013	6/14/2022	11.71	28	Smoke from southwest US wildfires
Ely	270750005	6/14/2022	10.91	18	Smoke from southwest US wildfires
LACROSSE DOT	550630012	6/14/2022	18.91	24.3	Smoke from southwest US wildfires
Lakeville – Near Road	270370480	6/14/2022	14.75	29	Smoke from southwest US wildfires
Leech Lake Nation	270213410	6/14/2022	11.83	33	Smoke from southwest US wildfires
Marshall	270834210	6/14/2022	12.42	31	Smoke from southwest US wildfires
Minneapolis - Near Road	270530962	6/14/2022	13.75	27	Smoke from southwest US wildfires
Minneapolis-Phillips	270530963	6/14/2022	17.25	33	Smoke from southwest US wildfires
Rochester	271095008	6/14/2022	20.04	38	Smoke from southwest US wildfires
Shakopee	271390505	6/14/2022	21.77	43	Smoke from southwest US wildfires
St. Michael	271713201	6/14/2022	14.63	29	Smoke from southwest US wildfires

Site	Site AQS	Date (LST)	Daily average ($\mu\text{g}/\text{m}^3$)	Max hour ($\mu\text{g}/\text{m}^3$)	Notes
St. Paul-Harding	271230871	6/14/2022	16.87	32	Smoke from southwest US wildfires
Apple Valley	270370470	10/20/2022	14.98	23	Canada Wildfire Smoke
Blaine	270031002	10/20/2022	11.87	20	Canada Wildfire Smoke
Brainerd	270353204	10/20/2022	11.82	18.3	Canada Wildfire Smoke
Detroit Lakes	270052013	10/20/2022	12.82	20	Canada Wildfire Smoke
Fargo NW	380171004	10/20/2022	31.78	45.1	Canada Wildfire Smoke
LACROSSE DOT	550630012	10/20/2022	13.47	18.5	Canada Wildfire Smoke
Lakeville - Near Road	270370480	10/20/2022	15.74	26.6	Canada Wildfire Smoke
Leech Lake Nation	270213410	10/20/2022	13.21	19	Canada Wildfire Smoke
Marshall	270834210	10/20/2022	17.54	27	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	10/20/2022	19.22	72.4	Canada Wildfire Smoke
Minneapolis-Phillips	270530963	10/20/2022	16.37	25.9	Canada Wildfire Smoke
Red Lake Nation	270072304	10/20/2022	9.38	17	Canada Wildfire Smoke
Rochester	271095008	10/20/2022	17.93	32.3	Canada Wildfire Smoke
Shakopee	271390505	10/20/2022	17.3	26.9	Canada Wildfire Smoke
St. Cloud	271453052	10/20/2022	14.64	26.8	Canada Wildfire Smoke
St. Michael	271713201	10/20/2022	14.77	24.4	Canada Wildfire Smoke
St. Paul-Hardin	271230871	10/20/2022	12.46	21	Canada Wildfire Smoke
Apple Valley	270370470	10/21/2022	22.78	34.3	Canada Wildfire Smoke
Blaine	270031002	10/21/2022	22.08	45	Canada Wildfire Smoke
Brainerd	270353204	10/21/2022	16.82	25.3	Canada Wildfire Smoke
Detroit Lakes	270052013	10/21/2022	12.42	25	Canada Wildfire Smoke
Duluth-WDSE	271377550	10/21/2022	12.04	41	Canada Wildfire Smoke
Ely	270750005	10/21/2022	9	19	Canada Wildfire Smoke
Fargo NW	380171004	10/21/2022	20.85	31	Canada Wildfire Smoke
Fond du Lac	270177417	10/21/2022	9.79	18	Canada Wildfire Smoke
Grand Portage	270317810	10/21/2022	3.92	16	Canada Wildfire Smoke
LACROSSE DOT	550630012	10/21/2022	27.2	48.8	Canada Wildfire Smoke
Lakeville – Near Road	270370480	10/21/2022	24.58	31.6	Canada Wildfire Smoke
Leech Lake Nation	270213410	10/21/2022	13.5	27	Canada Wildfire Smoke
Marshall	270834210	10/21/2022	18.79	26	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	10/21/2022	28.81	52.6	Canada Wildfire Smoke
Minneapolis-Phillips	270530963	10/21/2022	29.78	53.4	Canada Wildfire Smoke
Red Lake Nation	270072304	10/21/2022	10.92	29	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Rochester	271095008	10/21/2022	30.45	44.3	Canada Wildfire Smoke
Shakopee	271390505	10/21/2022	29.62	57.5	Canada Wildfire Smoke
St. Cloud	271453052	10/21/2022	23.68	27.7	Canada Wildfire Smoke
St. Michael	271713201	10/21/2022	29.92	51.1	Canada Wildfire Smoke
St. Paul-Harding	271230871	10/21/2022	22.88	54	Canada Wildfire Smoke
Virginia	271377001	10/21/2022	11.46	21	Canada Wildfire Smoke
West Duluth	271377554	10/21/2022	9.83	21	Canada Wildfire Smoke
Apple Valley	270370470	10/22/2022	24.41	32.3	Canada Wildfire Smoke
Blaine	270031002	10/22/2022	19.46	35	Canada Wildfire Smoke
Brainerd	270353204	10/22/2022	17.25	21.8	Canada Wildfire Smoke
Detroit Lakes	270052013	10/22/2022	13.5	19	Canada Wildfire Smoke
Fargo NW	380171004	10/22/2022	24.2	31.8	Canada Wildfire Smoke
LACROSSE DOT	550630012	10/22/2022	19.17	33.7	Canada Wildfire Smoke
Lakeville – Near Road	270370480	10/22/2022	24.4	36.9	Canada Wildfire Smoke
Leech Lake Nation	270213410	10/22/2022	11.96	18	Canada Wildfire Smoke
Marshall	270834210	10/22/2022	20.04	32	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	10/22/2022	25.79	44.8	Canada Wildfire Smoke
Minneapolis-Phillips	270530963	10/22/2022	26.61	43.1	Canada Wildfire Smoke
Rochester	271095008	10/22/2022	22.75	39	Canada Wildfire Smoke
Shakopee	271390505	10/22/2022	24.34	37.5	Canada Wildfire Smoke
St. Cloud	271453052	10/22/2022	23.56	40.1	Canada Wildfire Smoke
St. Michael	271713201	10/22/2022	27.29	46.3	Canada Wildfire Smoke
St. Paul-Harding	271230871	10/22/2022	16.5	35	Canada Wildfire Smoke

2023

For 2023, there were 80 days with high smoke impacts (Table 12). Smoke from fires located throughout Canada impacted Minnesota monitors from May 16 to September 22. Daily satellite imagery, fire locations, and monitor data for each day from 2023 identified in Table 12 can be found in Appendix B.

Table 12: List of days for 2023 when 24-hour PM_{2.5} concentrations were influenced by wildfire smoke. Note: the concentrations in this table are non-adjusted T640 data, but should be within 1-2 µg/m³ of the adjusted T640 concentrations.

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Fargo NW	380171004	5/16/2023	26.8	49.3	Canada Wildfire Smoke
Fargo NW	380171004	5/17/2023	49.2	226.9	Canada Wildfire Smoke
Marshall	270834210	5/17/2023	17.2	26.3	Canada Wildfire Smoke
Apple Valley	270370470	5/18/2023	51.9	115.3	Canada Wildfire Smoke
Blaine	270031002	5/18/2023	26.4	79	Canada Wildfire Smoke
Brainerd	270353204	5/18/2023	37.7	103.5	Canada Wildfire Smoke
Detroit Lakes	270052013	5/18/2023	87.2	187.9	Canada Wildfire Smoke
Duluth-WDSE	271377550	5/18/2023	22.8	100.1	Canada Wildfire Smoke
Ely	270750005	5/18/2023	21.5	63	Canada Wildfire Smoke
Fargo NW	380171004	5/18/2023	89.6	219.3	Canada Wildfire Smoke
Fond du Lac	270177417	5/18/2023	25.7	86.8	Canada Wildfire Smoke
Lakeville - Near Road	270370480	5/18/2023	51.4	120.8	Canada Wildfire Smoke
Leech Lake Nation	270213410	5/18/2023	51.8	120	Canada Wildfire Smoke
Marshall	270834210	5/18/2023	86.7	198.9	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	5/18/2023	40.2	111.9	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	5/18/2023	39.5	108.9	Canada Wildfire Smoke
Red Lake Nation	270072304	5/18/2023	51.2	117	Canada Wildfire Smoke
Rochester	271095008	5/18/2023	30.7	80.5	Canada Wildfire Smoke
Shakopee	271390505	5/18/2023	59.9	144.2	Canada Wildfire Smoke
St. Cloud	271453052	5/18/2023	48.1	128.3	Canada Wildfire Smoke
St. Michael	271713201	5/18/2023	40.6	103.7	Canada Wildfire Smoke
St. Paul-Harding	271230871	5/18/2023	34.5	87.7	Canada Wildfire Smoke
Virginia	271377001	5/18/2023	29.0	95.1	Canada Wildfire Smoke
West Duluth	271377554	5/18/2023	22.3	92.4	Canada Wildfire Smoke
Apple Valley	270370470	5/21/2023	24.4	56.4	Canada Wildfire Smoke
Marshall	270834210	5/21/2023	20.2	24.2	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	5/21/2023	25.2	39.1	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	5/21/2023	23.3	41.5	Canada Wildfire Smoke
Shakopee	271390505	5/21/2023	21.9	67.7	Canada Wildfire Smoke
St. Paul-Harding	271230871	5/21/2023	20.6	32.4	Canada Wildfire Smoke
Apple Valley	270370470	5/22/2023	20.8	28.5	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Fargo NW	380171004	5/22/2023	21.3	26.7	Canada Wildfire Smoke
Lakeville - Near Road	270370480	5/22/2023	19.5	46.5	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	5/22/2023	20.2	28.4	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	5/22/2023	21.7	37	Canada Wildfire Smoke
Rochester	271095008	5/22/2023	20.6	32.7	Canada Wildfire Smoke
Shakopee	271390505	5/22/2023	18.7	25	Canada Wildfire Smoke
Apple Valley	270370470	5/23/2023	24.6	29.5	Canada Wildfire Smoke
Fargo NW	380171004	5/23/2023	24.1	37	Canada Wildfire Smoke
Lakeville - Near Road	270370480	5/23/2023	23.1	42.4	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	5/23/2023	24.5	36.5	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	5/23/2023	23.5	29.9	Canada Wildfire Smoke
Red Lake Nation	270072304	5/23/2023	21.3	26.8	Canada Wildfire Smoke
Rochester	271095008	5/23/2023	19.8	30.2	Canada Wildfire Smoke
Shakopee	271390505	5/23/2023	21.9	27.6	Canada Wildfire Smoke
St. Michael	271713201	5/23/2023	20.0	22.9	Canada Wildfire Smoke
St. Paul-Harding	271230871	5/23/2023	24.2	34.7	Canada Wildfire Smoke
Apple Valley	270370470	6/4/2023	21.8	37	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/4/2023	20.1	38.3	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/4/2023	22.4	46.3	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/4/2023	19.8	36.7	Canada Wildfire Smoke
Rochester	271095008	6/4/2023	29.8	46.2	Canada Wildfire Smoke
Shakopee	271390505	6/4/2023	21.2	35.2	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/4/2023	21.0	41.8	Canada Wildfire Smoke
West Duluth	271377554	6/4/2023	21.5	26	Canada Wildfire Smoke
Apple Valley	270370470	6/5/2023	30.3	45.1	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/5/2023	43.6	67.8	Canada Wildfire Smoke
Ely	270750005	6/5/2023	30.2	51.7	Canada Wildfire Smoke
Fond du Lac	270177417	6/5/2023	39.9	60.6	Canada Wildfire Smoke
Grand Portage	270317810	6/5/2023	35.3	52	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/5/2023	29.1	42.5	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/5/2023	28.2	46.3	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/5/2023	27.1	45	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Rochester	271095008	6/5/2023	41.1	70.4	Canada Wildfire Smoke
Shakopee	271390505	6/5/2023	27.5	42	Canada Wildfire Smoke
St. Cloud	271453052	6/5/2023	21.9	38.8	Canada Wildfire Smoke
St. Michael	271713201	6/5/2023	22.2	33.2	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/5/2023	25.5	39.5	Canada Wildfire Smoke
Virginia	271377001	6/5/2023	28.0	55.3	Canada Wildfire Smoke
West Duluth	271377554	6/5/2023	41.7	63.2	Canada Wildfire Smoke
Apple Valley	270370470	6/6/2023	31.9	37.6	Canada Wildfire Smoke
Blaine	270031002	6/6/2023	26.4	46	Canada Wildfire Smoke
Brainerd	270353204	6/6/2023	30.6	51.9	Canada Wildfire Smoke
Detroit Lakes	270052013	6/6/2023	24.7	38.5	Canada Wildfire Smoke
Fargo NW	380171004	6/6/2023	21.5	29.4	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/6/2023	28.3	32.7	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/6/2023	27.5	47	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/6/2023	33.2	42.6	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/6/2023	31.1	39.9	Canada Wildfire Smoke
Red Lake Nation	270072304	6/6/2023	34.5	55.2	Canada Wildfire Smoke
Rochester	271095008	6/6/2023	27.0	34.8	Canada Wildfire Smoke
Shakopee	271390505	6/6/2023	30.5	38.3	Canada Wildfire Smoke
St. Cloud	271453052	6/6/2023	35.3	48.3	Canada Wildfire Smoke
St. Michael	271713201	6/6/2023	35.6	44.7	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/6/2023	30.9	37.8	Canada Wildfire Smoke
Apple Valley	270370470	6/7/2023	19.4	36.4	Canada Wildfire Smoke
Fargo NW	380171004	6/7/2023	19.8	26	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/7/2023	19.2	35.3	Canada Wildfire Smoke
Marshall	270834210	6/7/2023	21.9	32.9	Canada Wildfire Smoke
Rochester	271095008	6/7/2023	17.7	37.8	Canada Wildfire Smoke
Shakopee	271390505	6/7/2023	20.3	37.2	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/9/2023	21.1	62	Canada Wildfire Smoke
Virginia	271377001	6/12/2023	17.8	35.2	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/13/2023	21.4	49.9	Canada Wildfire Smoke
Ely	270750005	6/13/2023	29.6	137.7	Canada Wildfire Smoke
Fond du Lac	270177417	6/13/2023	21.4	42.1	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/13/2023	20.0	76	Canada Wildfire Smoke
Red Lake Nation	270072304	6/13/2023	35.8	145.1	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Virginia	271377001	6/13/2023	27.7	116.7	Canada Wildfire Smoke
West Duluth	271377554	6/13/2023	19.5	45.8	Canada Wildfire Smoke
Apple Valley	270370470	6/14/2023	103.6	231.5	Canada Wildfire Smoke
Blaine	270031002	6/14/2023	89.2	158	Canada Wildfire Smoke
Brainerd	270353204	6/14/2023	75.8	151.8	Canada Wildfire Smoke
Detroit Lakes	270052013	6/14/2023	83.2	138.5	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/14/2023	61.6	136.3	Canada Wildfire Smoke
Ely	270750005	6/14/2023	36.7	135.1	Canada Wildfire Smoke
Fargo NW	380171004	6/14/2023	75.4	137	Canada Wildfire Smoke
Fond du Lac	270177417	6/14/2023	63.2	128.8	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/14/2023	92.1	216.9	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/14/2023	53.1	114	Canada Wildfire Smoke
Marshall	270834210	6/14/2023	24.6	43.9	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/14/2023	107.1	203.5	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/14/2023	105.3	203.7	Canada Wildfire Smoke
Red Lake Nation	270072304	6/14/2023	62.3	175.6	Canada Wildfire Smoke
Rochester	271095008	6/14/2023	53.6	165.8	Canada Wildfire Smoke
Shakopee	271390505	6/14/2023	95.7	198.9	Canada Wildfire Smoke
St. Cloud	271453052	6/14/2023	102.5	159.6	Canada Wildfire Smoke
St. Michael	271713201	6/14/2023	105.8	183.8	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/14/2023	111.4	220.9	Canada Wildfire Smoke
Virginia	271377001	6/14/2023	54.1	147.2	Canada Wildfire Smoke
West Duluth	271377554	6/14/2023	58.3	124.6	Canada Wildfire Smoke
Apple Valley	270370470	6/15/2023	46.7	204	Canada Wildfire Smoke
Blaine	270031002	6/15/2023	22.6	86	Canada Wildfire Smoke
Brainerd	270353204	6/15/2023	18.9	24.4	Canada Wildfire Smoke
Detroit Lakes	270052013	6/15/2023	23.2	28.8	Canada Wildfire Smoke
Fargo NW	380171004	6/15/2023	24.5	29.6	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/15/2023	47.1	194	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/15/2023	18.9	30	Canada Wildfire Smoke
Marshall	270834210	6/15/2023	46.8	70.8	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/15/2023	36.2	151.5	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/15/2023	35.2	143.9	Canada Wildfire Smoke
Red Lake Nation	270072304	6/15/2023	20.6	29.5	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Rochester	271095008	6/15/2023	49.9	154	Canada Wildfire Smoke
Shakopee	271390505	6/15/2023	49.1	176.5	Canada Wildfire Smoke
St. Cloud	271453052	6/15/2023	26.3	70.4	Canada Wildfire Smoke
St. Michael	271713201	6/15/2023	34.9	129.4	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/15/2023	30.5	121	Canada Wildfire Smoke
Apple Valley	270370470	6/16/2023	22.4	33.6	Canada Wildfire Smoke
Brainerd	270353204	6/16/2023	19.1	30.3	Canada Wildfire Smoke
Ely	270750005	6/16/2023	16.6	26.5	Canada Wildfire Smoke
Fargo NW	380171004	6/16/2023	21.6	27.8	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/16/2023	20.7	30.8	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/16/2023	19.0	30.5	Canada Wildfire Smoke
Marshall	270834210	6/16/2023	23.1	28.2	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/16/2023	23.7	49.9	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/16/2023	23.0	42.2	Canada Wildfire Smoke
Red Lake Nation	270072304	6/16/2023	22.2	30.4	Canada Wildfire Smoke
Rochester	271095008	6/16/2023	20.7	36.4	Canada Wildfire Smoke
Shakopee	271390505	6/16/2023	20.5	31.8	Canada Wildfire Smoke
St. Cloud	271453052	6/16/2023	21.2	29.5	Canada Wildfire Smoke
St. Michael	271713201	6/16/2023	21.7	30.6	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/16/2023	22.2	44.3	Canada Wildfire Smoke
Virginia	271377001	6/16/2023	17.6	30.5	Canada Wildfire Smoke
Apple Valley	270370470	6/17/2023	26.1	36.7	Canada Wildfire Smoke
Blaine	270031002	6/17/2023	21.0	42	Canada Wildfire Smoke
Brainerd	270353204	6/17/2023	24.5	26.7	Canada Wildfire Smoke
Detroit Lakes	270052013	6/17/2023	22.3	27.1	Canada Wildfire Smoke
Ely	270750005	6/17/2023	20.5	25.8	Canada Wildfire Smoke
Fargo NW	380171004	6/17/2023	24.1	28	Canada Wildfire Smoke
Fond du Lac	270177417	6/17/2023	17.0	25	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/17/2023	22.6	27.3	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/17/2023	25.2	28.6	Canada Wildfire Smoke
Marshall	270834210	6/17/2023	21.2	33.5	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/17/2023	26.1	43.3	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/17/2023	25.7	39.2	Canada Wildfire Smoke
Red Lake Nation	270072304	6/17/2023	29.9	33.4	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Rochester	271095008	6/17/2023	22.5	30.8	Canada Wildfire Smoke
Shakopee	271390505	6/17/2023	24.2	37.6	Canada Wildfire Smoke
St. Cloud	271453052	6/17/2023	27.6	31.9	Canada Wildfire Smoke
St. Michael	271713201	6/17/2023	25.1	31.4	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/17/2023	23.1	33.7	Canada Wildfire Smoke
Virginia	271377001	6/17/2023	20.1	26.2	Canada Wildfire Smoke
Brainerd	270353204	6/18/2023	19.1	23.1	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/18/2023	18.9	26.4	Canada Wildfire Smoke
Ely	270750005	6/18/2023	24.9	30.6	Canada Wildfire Smoke
Fargo NW	380171004	6/18/2023	22.5	28.3	Canada Wildfire Smoke
Fond du Lac	270177417	6/18/2023	19.9	23	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/18/2023	19.3	26.8	Canada Wildfire Smoke
Red Lake Nation	270072304	6/18/2023	20.9	30	Canada Wildfire Smoke
Rochester	271095008	6/18/2023	20.6	30.3	Canada Wildfire Smoke
Virginia	271377001	6/18/2023	24.8	28.3	Canada Wildfire Smoke
West Duluth	271377554	6/18/2023	16.2	25.7	Canada Wildfire Smoke
Blaine	270031002	6/19/2023	19.7	44	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/19/2023	29.0	32.8	Canada Wildfire Smoke
Ely	270750005	6/19/2023	25.0	30.9	Canada Wildfire Smoke
Fond du Lac	270177417	6/19/2023	25.6	29	Canada Wildfire Smoke
Grand Portage	270317810	6/19/2023	19.2	30	Canada Wildfire Smoke
Red Lake Nation	270072304	6/19/2023	17.6	22.4	Canada Wildfire Smoke
Virginia	271377001	6/19/2023	22.2	26.2	Canada Wildfire Smoke
West Duluth	271377554	6/19/2023	27.7	32.6	Canada Wildfire Smoke
Apple Valley	270370470	6/20/2023	24.3	29.4	Canada Wildfire Smoke
Blaine	270031002	6/20/2023	19.2	59	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/20/2023	22.7	27.1	Canada Wildfire Smoke
Ely	270750005	6/20/2023	20.2	22.6	Canada Wildfire Smoke
Fond du Lac	270177417	6/20/2023	20.4	24.6	Canada Wildfire Smoke
Grand Portage	270317810	6/20/2023	15.8	21	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/20/2023	21.7	26.3	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/20/2023	22.8	26.7	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/20/2023	22.4	26.1	Canada Wildfire Smoke
Red Lake Nation	270072304	6/20/2023	17.5	24	Canada Wildfire Smoke
Rochester	271095008	6/20/2023	21.8	26.1	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Shakopee	271390505	6/20/2023	20.4	25.4	Canada Wildfire Smoke
St. Cloud	271453052	6/20/2023	18.8	24.5	Canada Wildfire Smoke
St. Michael	271713201	6/20/2023	19.5	25.3	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/20/2023	21.8	26.1	Canada Wildfire Smoke
Virginia	271377001	6/20/2023	22.0	24.1	Canada Wildfire Smoke
West Duluth	271377554	6/20/2023	21.6	28.6	Canada Wildfire Smoke
Apple Valley	270370470	6/21/2023	22.9	29.4	Canada Wildfire Smoke
Brainerd	270353204	6/21/2023	19.8	22.7	Canada Wildfire Smoke
Detroit Lakes	270052013	6/21/2023	20.0	22.6	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/21/2023	22.3	28.7	Canada Wildfire Smoke
Ely	270750005	6/21/2023	21.1	23.7	Canada Wildfire Smoke
Fond du Lac	270177417	6/21/2023	20.4	21.7	Canada Wildfire Smoke
Grand Portage	270317810	6/21/2023	15.9	22	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/21/2023	21.1	27.7	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/21/2023	19.2	22.1	Canada Wildfire Smoke
Marshall	270834210	6/21/2023	20.0	22.3	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/21/2023	21.5	25.1	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/21/2023	20.8	24.6	Canada Wildfire Smoke
Red Lake Nation	270072304	6/21/2023	21.9	23.8	Canada Wildfire Smoke
Rochester	271095008	6/21/2023	18.5	24.1	Canada Wildfire Smoke
Shakopee	271390505	6/21/2023	21.5	26.4	Canada Wildfire Smoke
St. Cloud	271453052	6/21/2023	22.9	32.9	Canada Wildfire Smoke
St. Michael	271713201	6/21/2023	21.6	24.5	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/21/2023	20.6	25	Canada Wildfire Smoke
Virginia	271377001	6/21/2023	22.0	24.3	Canada Wildfire Smoke
West Duluth	271377554	6/21/2023	22.4	25.8	Canada Wildfire Smoke
Apple Valley	270370470	6/22/2023	20.1	22.2	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/22/2023	21.0	25.2	Canada Wildfire Smoke
Ely	270750005	6/22/2023	16.1	21.6	Canada Wildfire Smoke
Fond du Lac	270177417	6/22/2023	16.6	22.6	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/22/2023	19.2	26.4	Canada Wildfire Smoke
Rochester	271095008	6/22/2023	18.7	24.5	Canada Wildfire Smoke
West Duluth	271377554	6/22/2023	24.5	28.2	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/23/2023	22.3	49.8	Canada Wildfire Smoke
Ely	270750005	6/23/2023	27.7	76.2	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average ($\mu\text{g}/\text{m}^3$)	Max hour ($\mu\text{g}/\text{m}^3$)	Notes
Grand Portage	270317810	6/23/2023	32.8	66	Canada Wildfire Smoke
Rochester	271095008	6/23/2023	17.8	22.5	Canada Wildfire Smoke
West Duluth	271377554	6/23/2023	25.1	49	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/24/2023	31.5	62.9	Canada Wildfire Smoke
Ely	270750005	6/24/2023	28.4	46.7	Canada Wildfire Smoke
Fond du Lac	270177417	6/24/2023	27.5	42.8	Canada Wildfire Smoke
Grand Portage	270317810	6/24/2023	20.3	48	Canada Wildfire Smoke
Red Lake Nation	270072304	6/24/2023	21.8	33.7	Canada Wildfire Smoke
West Duluth	271377554	6/24/2023	29.1	63.1	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/25/2023	22.8	48.6	Canada Wildfire Smoke
Fond du Lac	270177417	6/25/2023	17.2	29.1	Canada Wildfire Smoke
Grand Portage	270317810	6/25/2023	18.6	36	Canada Wildfire Smoke
Red Lake Nation	270072304	6/25/2023	16.3	23.3	Canada Wildfire Smoke
West Duluth	271377554	6/25/2023	21.7	44.8	Canada Wildfire Smoke
Apple Valley	270370470	6/26/2023	24.4	52.5	Canada Wildfire Smoke
Detroit Lakes	270052013	6/26/2023	21.1	34	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/26/2023	30.2	69.9	Canada Wildfire Smoke
Ely	270750005	6/26/2023	35.3	58.4	Canada Wildfire Smoke
Fargo NW	380171004	6/26/2023	19.5	29.5	Canada Wildfire Smoke
Fond du Lac	270177417	6/26/2023	31.0	53	Canada Wildfire Smoke
Grand Portage	270317810	6/26/2023	43.4	94	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/26/2023	23.0	47.8	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/26/2023	17.4	32.4	Canada Wildfire Smoke
Marshall	270834210	6/26/2023	31.5	40.5	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/26/2023	23.0	49.2	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/26/2023	23.6	48.9	Canada Wildfire Smoke
Red Lake Nation	270072304	6/26/2023	21.4	48.4	Canada Wildfire Smoke
Shakopee	271390505	6/26/2023	23.3	50.1	Canada Wildfire Smoke
St. Cloud	271453052	6/26/2023	22.1	42.9	Canada Wildfire Smoke
St. Michael	271713201	6/26/2023	22.9	53.2	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/26/2023	24.7	48	Canada Wildfire Smoke
Virginia	271377001	6/26/2023	27.7	47.7	Canada Wildfire Smoke
West Duluth	271377554	6/26/2023	29.5	54.8	Canada Wildfire Smoke
Apple Valley	270370470	6/27/2023	42.3	105.2	Canada Wildfire Smoke
Blaine	270031002	6/27/2023	31.3	77	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Detroit Lakes	270052013	6/27/2023	23.8	38.8	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/27/2023	52.5	98	Canada Wildfire Smoke
Ely	270750005	6/27/2023	41.0	72.1	Canada Wildfire Smoke
Fargo NW	380171004	6/27/2023	31.5	45.1	Canada Wildfire Smoke
Fond du Lac	270177417	6/27/2023	52.0	87.4	Canada Wildfire Smoke
Grand Portage	270317810	6/27/2023	31.5	34	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/27/2023	37.5	94.7	Canada Wildfire Smoke
Marshall	270834210	6/27/2023	34.3	43.7	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/27/2023	43.3	98.1	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/27/2023	43.9	96.4	Canada Wildfire Smoke
Red Lake Nation	270072304	6/27/2023	16.1	30.6	Canada Wildfire Smoke
Rochester	271095008	6/27/2023	44.4	109.4	Canada Wildfire Smoke
Shakopee	271390505	6/27/2023	30.5	68.9	Canada Wildfire Smoke
St. Cloud	271453052	6/27/2023	23.7	41.1	Canada Wildfire Smoke
St. Michael	271713201	6/27/2023	26.4	40.7	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/27/2023	49.6	111.2	Canada Wildfire Smoke
Virginia	271377001	6/27/2023	42.9	100.1	Canada Wildfire Smoke
West Duluth	271377554	6/27/2023	48.1	86.7	Canada Wildfire Smoke
Apple Valley	270370470	6/28/2023	67.3	123.4	Canada Wildfire Smoke
Blaine	270031002	6/28/2023	50.4	80	Canada Wildfire Smoke
Brainerd	270353204	6/28/2023	33.2	39.6	Canada Wildfire Smoke
Detroit Lakes	270052013	6/28/2023	26.8	37	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/28/2023	22.2	39.7	Canada Wildfire Smoke
Ely	270750005	6/28/2023	24.6	34	Canada Wildfire Smoke
Fargo NW	380171004	6/28/2023	20.0	30.6	Canada Wildfire Smoke
Fond du Lac	270177417	6/28/2023	17.5	22.7	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/28/2023	61.4	115.5	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/28/2023	26.5	43.1	Canada Wildfire Smoke
Marshall	270834210	6/28/2023	40.0	123.5	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/28/2023	63.0	106.1	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/28/2023	60.7	102	Canada Wildfire Smoke
Red Lake Nation	270072304	6/28/2023	20.3	44.6	Canada Wildfire Smoke
Rochester	271095008	6/28/2023	77.8	111.8	Canada Wildfire Smoke
Shakopee	271390505	6/28/2023	62.3	113.7	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
St. Cloud	271453052	6/28/2023	60.8	96.6	Canada Wildfire Smoke
St. Michael	271713201	6/28/2023	60.8	104.3	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/28/2023	62.7	109.8	Canada Wildfire Smoke
Virginia	271377001	6/28/2023	22.7	29.9	Canada Wildfire Smoke
West Duluth	271377554	6/28/2023	18.5	32	Canada Wildfire Smoke
Apple Valley	270370470	6/29/2023	30.5	54.7	Canada Wildfire Smoke
Blaine	270031002	6/29/2023	21.7	42	Canada Wildfire Smoke
Brainerd	270353204	6/29/2023	19.0	32.9	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/29/2023	16.9	24.7	Canada Wildfire Smoke
Grand Portage	270317810	6/29/2023	25.3	37	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/29/2023	26.3	46.9	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/29/2023	18.3	39.5	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/29/2023	29.7	54.1	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/29/2023	29.7	53.4	Canada Wildfire Smoke
Red Lake Nation	270072304	6/29/2023	17.1	34.7	Canada Wildfire Smoke
Rochester	271095008	6/29/2023	31.2	76.5	Canada Wildfire Smoke
Shakopee	271390505	6/29/2023	29.1	49.1	Canada Wildfire Smoke
St. Cloud	271453052	6/29/2023	27.0	53.4	Canada Wildfire Smoke
St. Michael	271713201	6/29/2023	29.4	55.2	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/29/2023	30.2	57.5	Canada Wildfire Smoke
West Duluth	271377554	6/29/2023	16.9	32.9	Canada Wildfire Smoke
Apple Valley	270370470	6/30/2023	19.1	24.9	Canada Wildfire Smoke
Fargo NW	380171004	6/30/2023	22.5	35.8	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/30/2023	16.8	22.3	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/30/2023	17.8	24.3	Canada Wildfire Smoke
Red Lake Nation	270072304	6/30/2023	21.5	29	Canada Wildfire Smoke
Shakopee	271390505	6/30/2023	18.4	26.5	Canada Wildfire Smoke
St. Michael	271713201	6/30/2023	17.3	21.5	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/30/2023	18.7	28.4	Canada Wildfire Smoke
Apple Valley	270370470	7/1/2023	23.8	28.2	Canada Wildfire Smoke
Brainerd	270353204	7/1/2023	23.2	26.2	Canada Wildfire Smoke
Detroit Lakes	270052013	7/1/2023	20.7	25.7	Canada Wildfire Smoke
Duluth-WDSE	271377550	7/1/2023	19.5	24.7	Canada Wildfire Smoke
Fargo NW	380171004	7/1/2023	28.4	43.5	Canada Wildfire Smoke
Lakeville - Near Road	270370480	7/1/2023	22.4	37	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Leech Lake Nation	270213410	7/1/2023	22.6	26.1	Canada Wildfire Smoke
Marshall	270834210	7/1/2023	19.2	21	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	7/1/2023	21.9	27	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	7/1/2023	21.4	26.7	Canada Wildfire Smoke
Red Lake Nation	270072304	7/1/2023	25.9	29.3	Canada Wildfire Smoke
Rochester	271095008	7/1/2023	20.1	35.5	Canada Wildfire Smoke
Shakopee	271390505	7/1/2023	22.8	36.2	Canada Wildfire Smoke
St. Cloud	271453052	7/1/2023	23.7	37.7	Canada Wildfire Smoke
St. Michael	271713201	7/1/2023	22.9	53.7	Canada Wildfire Smoke
St. Paul-Harding	271230871	7/1/2023	23.0	33.4	Canada Wildfire Smoke
West Duluth	271377554	7/1/2023	17.7	23.2	Canada Wildfire Smoke
Apple Valley	270370470	7/2/2023	21.4	31.9	Canada Wildfire Smoke
Brainerd	270353204	7/2/2023	19.7	27.3	Canada Wildfire Smoke
Fargo NW	380171004	7/2/2023	22.2	23.6	Canada Wildfire Smoke
Lakeville - Near Road	270370480	7/2/2023	19.4	27.9	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	7/2/2023	20.6	30.2	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	7/2/2023	20.5	31.1	Canada Wildfire Smoke
Red Lake Nation	270072304	7/2/2023	19.0	26	Canada Wildfire Smoke
Rochester	271095008	7/2/2023	17.5	33.4	Canada Wildfire Smoke
Shakopee	271390505	7/2/2023	23.4	37.5	Canada Wildfire Smoke
St. Cloud	271453052	7/2/2023	19.7	39.3	Canada Wildfire Smoke
St. Michael	271713201	7/2/2023	20.5	30	Canada Wildfire Smoke
Brainerd	270353204	7/14/2023	28.6	53.2	Canada Wildfire Smoke
Detroit Lakes	270052013	7/14/2023	28.0	49.7	Canada Wildfire Smoke
Duluth-WDSE	271377550	7/14/2023	26.5	49.1	Canada Wildfire Smoke
Ely	270750005	7/14/2023	20.1	42.2	Canada Wildfire Smoke
Fargo NW	380171004	7/14/2023	37.7	89	Canada Wildfire Smoke
Fond du Lac	270177417	7/14/2023	25.9	52.2	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/14/2023	21.9	40.3	Canada Wildfire Smoke
Marshall	270834210	7/14/2023	35.3	111.3	Canada Wildfire Smoke
Red Lake Nation	270072304	7/14/2023	23.7	35.8	Canada Wildfire Smoke
St. Cloud	271453052	7/14/2023	31.6	84	Canada Wildfire Smoke
Virginia	271377001	7/14/2023	21.9	45.4	Canada Wildfire Smoke
West Duluth	271377554	7/14/2023	26.0	52.7	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	7/15/2023	51.4	100.3	Canada Wildfire Smoke
Blaine	270031002	7/15/2023	28.6	55	Canada Wildfire Smoke
Brainerd	270353204	7/15/2023	23.2	81.5	Canada Wildfire Smoke
Detroit Lakes	270052013	7/15/2023	20.6	57.2	Canada Wildfire Smoke
Duluth-WDSE	271377550	7/15/2023	16.8	35.5	Canada Wildfire Smoke
Fargo NW	380171004	7/15/2023	27.7	90.4	Canada Wildfire Smoke
Fond du Lac	270177417	7/15/2023	15.7	32.6	Canada Wildfire Smoke
Lakeville - Near Road	270370480	7/15/2023	47.0	83.9	Canada Wildfire Smoke
Marshall	270834210	7/15/2023	74.1	114.2	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	7/15/2023	47.8	48.5	Canada Wildfire Smoke
Rochester	271095008	7/15/2023	45.7	80.5	Canada Wildfire Smoke
Shakopee	271390505	7/15/2023	49.7	84.8	Canada Wildfire Smoke
St. Cloud	271453052	7/15/2023	35.8	66.6	Canada Wildfire Smoke
St. Michael	271713201	7/15/2023	38.3	77.9	Canada Wildfire Smoke
St. Paul-Harding	271230871	7/15/2023	42.2	81.2	Canada Wildfire Smoke
West Duluth	271377554	7/15/2023	16.9	33.8	Canada Wildfire Smoke
Apple Valley	270370470	7/16/2023	19.9	63.3	Canada Wildfire Smoke
Lakeville - Near Road	270370480	7/16/2023	20.3	61.5	Canada Wildfire Smoke
Marshall	270834210	7/16/2023	48.4	91	Canada Wildfire Smoke
Rochester	271095008	7/16/2023	29.1	76.8	Canada Wildfire Smoke
Shakopee	271390505	7/16/2023	19.4	56.1	Canada Wildfire Smoke
Red Lake Nation	270072304	7/17/2023	17.1	47	Canada Wildfire Smoke
Brainerd	270353204	7/18/2023	23.8	38.2	Canada Wildfire Smoke
Detroit Lakes	270052013	7/18/2023	19.0	45.2	Canada Wildfire Smoke
Fargo NW	380171004	7/18/2023	19.6	37.9	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/18/2023	22.4	36.9	Canada Wildfire Smoke
Red Lake Nation	270072304	7/18/2023	25.8	47.1	Canada Wildfire Smoke
Fargo NW	380171004	7/22/2023	19.7	26.2	Canada Wildfire Smoke
Red Lake Nation	270072304	7/22/2023	22.6	47.8	Canada Wildfire Smoke
Apple Valley	270370470	7/23/2023	33.3	57.6	Canada Wildfire Smoke
Blaine	270031002	7/23/2023	35.1	57	Canada Wildfire Smoke
Brainerd	270353204	7/23/2023	48.7	71.6	Canada Wildfire Smoke
Detroit Lakes	270052013	7/23/2023	44.6	82	Canada Wildfire Smoke
Duluth-WDSE	271377550	7/23/2023	46.0	64.3	Canada Wildfire Smoke
Ely	270750005	7/23/2023	31.4	49	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Fargo NW	380171004	7/23/2023	28.8	47.5	Canada Wildfire Smoke
Fond du Lac	270177417	7/23/2023	42.8	66.5	Canada Wildfire Smoke
Grand Portage	270317810	7/23/2023	15.0	41	Canada Wildfire Smoke
Lakeville - Near Road	270370480	7/23/2023	27.6	46.1	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/23/2023	53.5	76.2	Canada Wildfire Smoke
Marshall	270834210	7/23/2023	29.2	35.9	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	7/23/2023	42.8	76.1	Canada Wildfire Smoke
Red Lake Nation	270072304	7/23/2023	47.5	62.6	Canada Wildfire Smoke
Shakopee	271390505	7/23/2023	32.3	51.7	Canada Wildfire Smoke
St. Cloud	271453052	7/23/2023	48.9	70.5	Canada Wildfire Smoke
St. Michael	271713201	7/23/2023	36.7	59	Canada Wildfire Smoke
St. Paul-Harding	271230871	7/23/2023	41.8	66.2	Canada Wildfire Smoke
Virginia	271377001	7/23/2023	44.8	58.2	Canada Wildfire Smoke
West Duluth	271377554	7/23/2023	42.6	61.1	Canada Wildfire Smoke
Apple Valley	270370470	7/24/2023	28.9	44.7	Canada Wildfire Smoke
Blaine	270031002	7/24/2023	30.6	66	Canada Wildfire Smoke
Brainerd	270353204	7/24/2023	52.0	64.6	Canada Wildfire Smoke
Detroit Lakes	270052013	7/24/2023	35.1	51.1	Canada Wildfire Smoke
Duluth-WDSE	271377550	7/24/2023	37.9	55.8	Canada Wildfire Smoke
Fargo NW	380171004	7/24/2023	34.9	46.9	Canada Wildfire Smoke
Fond du Lac	270177417	7/24/2023	41.3	52.4	Canada Wildfire Smoke
Lakeville - Near Road	270370480	7/24/2023	25.5	36	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/24/2023	42.9	54	Canada Wildfire Smoke
Marshall	270834210	7/24/2023	31.7	36	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	7/24/2023	35.0	139	Canada Wildfire Smoke
Red Lake Nation	270072304	7/24/2023	44.4	57.9	Canada Wildfire Smoke
Rochester	271095008	7/24/2023	33.1	38.8	Canada Wildfire Smoke
Shakopee	271390505	7/24/2023	28.9	41.1	Canada Wildfire Smoke
St. Cloud	271453052	7/24/2023	36.3	64.9	Canada Wildfire Smoke
St. Michael	271713201	7/24/2023	28.6	44.8	Canada Wildfire Smoke
St. Paul-Harding	271230871	7/24/2023	32.4	52.7	Canada Wildfire Smoke
Virginia	271377001	7/24/2023	19.6	46.2	Canada Wildfire Smoke
West Duluth	271377554	7/24/2023	34.4	46.8	Canada Wildfire Smoke
Apple Valley	270370470	7/25/2023	25.4	38.5	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Brainerd	270353204	7/25/2023	23.2	37.5	Canada Wildfire Smoke
Detroit Lakes	270052013	7/25/2023	21.0	38.1	Canada Wildfire Smoke
Duluth-WDSE	271377550	7/25/2023	24.0	28.7	Canada Wildfire Smoke
Ely	270750005	7/25/2023	20.1	30.1	Canada Wildfire Smoke
Fond du Lac	270177417	7/25/2023	25.8	27.8	Canada Wildfire Smoke
Lakeville - Near Road	270370480	7/25/2023	23.8	35.9	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/25/2023	26.9	37.4	Canada Wildfire Smoke
Marshall	270834210	7/25/2023	18.6	38.3	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	7/25/2023	22.8	34.7	Canada Wildfire Smoke
Red Lake Nation	270072304	7/25/2023	30.7	40.2	Canada Wildfire Smoke
Rochester	271095008	7/25/2023	24.0	33.8	Canada Wildfire Smoke
Shakopee	271390505	7/25/2023	24.0	38.2	Canada Wildfire Smoke
St. Cloud	271453052	7/25/2023	21.3	32	Canada Wildfire Smoke
St. Michael	271713201	7/25/2023	23.4	35.5	Canada Wildfire Smoke
St. Paul-Harding	271230871	7/25/2023	25.3	36.9	Canada Wildfire Smoke
Virginia	271377001	7/25/2023	28.6	37.7	Canada Wildfire Smoke
West Duluth	271377554	7/25/2023	22.5	25	Canada Wildfire Smoke
Fond du Lac	270177417	7/26/2023	18.4	28.5	Canada Wildfire Smoke
Virginia	271377001	7/26/2023	17.3	24.9	Canada Wildfire Smoke
Red Lake Nation	270072304	7/31/2023	18.5	31.5	Canada Wildfire Smoke
West Duluth	271377554	7/31/2023	16.5	37	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/1/2023	18.4	25.3	Canada Wildfire Smoke
West Duluth	271377554	8/1/2023	20.8	22.7	Canada Wildfire Smoke
Ely	270750005	8/3/2023	25.7	62.4	Canada Wildfire Smoke
Grand Portage	270317810	8/3/2023	19.7	56	Canada Wildfire Smoke
Red Lake Nation	270072304	8/3/2023	21.9	51.9	Canada Wildfire Smoke
Virginia	271377001	8/3/2023	19.3	40.5	Canada Wildfire Smoke
Brainerd	270353204	8/4/2023	23.8	36.9	Canada Wildfire Smoke
Detroit Lakes	270052013	8/4/2023	33.8	60.1	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/4/2023	23.2	41.8	Canada Wildfire Smoke
Ely	270750005	8/4/2023	19.7	27.1	Canada Wildfire Smoke
Fargo NW	380171004	8/4/2023	39.1	47	Canada Wildfire Smoke
Fond du Lac	270177417	8/4/2023	21.5	27.3	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/4/2023	31.4	42.3	Canada Wildfire Smoke
Red Lake Nation	270072304	8/4/2023	32.1	39.5	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
St. Cloud	271453052	8/4/2023	20.5	30.9	Canada Wildfire Smoke
Virginia	271377001	8/4/2023	24.4	41.4	Canada Wildfire Smoke
West Duluth	271377554	8/4/2023	23.2	41.7	Canada Wildfire Smoke
Apple Valley	270370470	8/5/2023	26.6	29.3	Canada Wildfire Smoke
Brainerd	270353204	8/5/2023	20.9	25.3	Canada Wildfire Smoke
Detroit Lakes	270052013	8/5/2023	19.2	25.6	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/5/2023	17.2	22.5	Canada Wildfire Smoke
Ely	270750005	8/5/2023	17.8	25.3	Canada Wildfire Smoke
Fargo NW	380171004	8/5/2023	21.5	34	Canada Wildfire Smoke
Fond du Lac	270177417	8/5/2023	16.9	22.2	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/5/2023	23.3	25.3	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/5/2023	21.2	25.5	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	8/5/2023	24.5	28.3	Canada Wildfire Smoke
Red Lake Nation	270072304	8/5/2023	23.1	26.7	Canada Wildfire Smoke
Rochester	271095008	8/5/2023	21.0	24.9	Canada Wildfire Smoke
Shakopee	271390505	8/5/2023	25.3	27.9	Canada Wildfire Smoke
St. Cloud	271453052	8/5/2023	24.3	28.4	Canada Wildfire Smoke
St. Michael	271713201	8/5/2023	24.8	27.9	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/5/2023	25.3	28.5	Canada Wildfire Smoke
Virginia	271377001	8/5/2023	19.7	24.4	Canada Wildfire Smoke
Apple Valley	270370470	8/6/2023	19.4	22.7	Canada Wildfire Smoke
Ely	270750005	8/6/2023	17.1	22.5	Canada Wildfire Smoke
Fond du Lac	270177417	8/6/2023	16.1	18.7	Canada Wildfire Smoke
Marshall	270834210	8/6/2023	19.3	22.4	Canada Wildfire Smoke
Red Lake Nation	270072304	8/6/2023	18.0	23.7	Canada Wildfire Smoke
Rochester	271095008	8/6/2023	20.5	22.1	Canada Wildfire Smoke
St. Cloud	271453052	8/6/2023	21.2	26.1	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/6/2023	19.1	23	Canada Wildfire Smoke
Virginia	271377001	8/6/2023	19.6	25.8	Canada Wildfire Smoke
Apple Valley	270370470	8/7/2023	19.4	22.3	Canada Wildfire Smoke
Detroit Lakes	270052013	8/7/2023	20.0	27.6	Canada Wildfire Smoke
Fargo NW	380171004	8/7/2023	22.6	35.8	Canada Wildfire Smoke
Marshall	270834210	8/7/2023	18.5	21.3	Canada Wildfire Smoke
Red Lake Nation	270072304	8/7/2023	18.1	27.9	Canada Wildfire Smoke
Rochester	271095008	8/7/2023	18.6	20.4	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
St. Cloud	271453052	8/7/2023	18.1	23.2	Canada Wildfire Smoke
Apple Valley	270370470	8/8/2023	24.5	31	Canada Wildfire Smoke
Brainerd	270353204	8/8/2023	22.3	33.1	Canada Wildfire Smoke
Detroit Lakes	270052013	8/8/2023	19.6	28.8	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/8/2023	25.9	36.7	Canada Wildfire Smoke
Ely	270750005	8/8/2023	23.8	33.3	Canada Wildfire Smoke
Fargo NW	380171004	8/8/2023	19.7	35.6	Canada Wildfire Smoke
Fond du Lac	270177417	8/8/2023	23.4	33.9	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/8/2023	22.2	27.7	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/8/2023	24.3	36.2	Canada Wildfire Smoke
Marshall	270834210	8/8/2023	26.2	33.3	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	8/8/2023	24.6	29.1	Canada Wildfire Smoke
Red Lake Nation	270072304	8/8/2023	27.9	37.8	Canada Wildfire Smoke
Rochester	271095008	8/8/2023	22.7	33.8	Canada Wildfire Smoke
Shakopee	271390505	8/8/2023	24.4	28.7	Canada Wildfire Smoke
St. Cloud	271453052	8/8/2023	25.4	34.4	Canada Wildfire Smoke
St. Michael	271713201	8/8/2023	23.7	27.7	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/8/2023	23.4	28.4	Canada Wildfire Smoke
Virginia	271377001	8/8/2023	26.1	43.6	Canada Wildfire Smoke
West Duluth	271377554	8/8/2023	24.4	34.6	Canada Wildfire Smoke
Apple Valley	270370470	8/9/2023	24.3	30.6	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/9/2023	21.7	28.4	Canada Wildfire Smoke
Marshall	270834210	8/9/2023	21.1	26.2	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	8/9/2023	20.3	27.9	Canada Wildfire Smoke
Rochester	271095008	8/9/2023	23.0	30.4	Canada Wildfire Smoke
Shakopee	271390505	8/9/2023	23.8	31.2	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/9/2023	21.1	28	Canada Wildfire Smoke
Grand Portage	270317810	8/16/2023	24.1	65	Malfunction?
Brainerd	270353204	8/17/2023	23.2	34.4	Canada Wildfire Smoke
Detroit Lakes	270052013	8/17/2023	27.4	35.8	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/17/2023	23.4	35.2	Canada Wildfire Smoke
Ely	270750005	8/17/2023	21.7	35.2	Canada Wildfire Smoke
Fargo NW	380171004	8/17/2023	30.9	36.4	Canada Wildfire Smoke
Fond du Lac	270177417	8/17/2023	22.7	38.9	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Leech Lake Nation	270213410	8/17/2023	25.9	45.3	Canada Wildfire Smoke
Marshall	270834210	8/17/2023	25.1	37.4	Canada Wildfire Smoke
Red Lake Nation	270072304	8/17/2023	30.2	54.6	Canada Wildfire Smoke
St. Cloud	271453052	8/17/2023	20.5	35.5	Canada Wildfire Smoke
Virginia	271377001	8/17/2023	25.1	40.5	Canada Wildfire Smoke
West Duluth	271377554	8/17/2023	22.3	34.4	Canada Wildfire Smoke
Apple Valley	270370470	8/18/2023	26.9	29.8	Canada Wildfire Smoke
Brainerd	270353204	8/18/2023	27.0	31.8	Canada Wildfire Smoke
Detroit Lakes	270052013	8/18/2023	23.4	29.1	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/18/2023	28.0	35.2	Canada Wildfire Smoke
Ely	270750005	8/18/2023	27.6	32.7	Canada Wildfire Smoke
Fargo NW	380171004	8/18/2023	22.3	32.2	Canada Wildfire Smoke
Fond du Lac	270177417	8/18/2023	23.7	31.2	Canada Wildfire Smoke
Grand Portage	270317810	8/18/2023	27.9	32.5	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/18/2023	24.9	29.1	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/18/2023	25.9	29.7	Canada Wildfire Smoke
Marshall	270834210	8/18/2023	23.4	31.5	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	8/18/2023	37.4	100.1	Canada Wildfire Smoke
Red Lake Nation	270072304	8/18/2023	28.6	35.1	Canada Wildfire Smoke
Rochester	271095008	8/18/2023	19.1	24.1	Canada Wildfire Smoke
Shakopee	271390505	8/18/2023	26.4	30.4	Canada Wildfire Smoke
St. Cloud	271453052	8/18/2023	27.9	32.7	Canada Wildfire Smoke
St. Michael	271713201	8/18/2023	26.2	29.9	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/18/2023	24.4	29.7	Canada Wildfire Smoke
Virginia	271377001	8/18/2023	26.4	31.4	Canada Wildfire Smoke
West Duluth	271377554	8/18/2023	26.2	31.8	Canada Wildfire Smoke
Detroit Lakes	270052013	8/19/2023	20.1	49.3	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/19/2023	17.1	29.5	Canada Wildfire Smoke
Ely	270750005	8/19/2023	16.1	25.1	Canada Wildfire Smoke
Fond du Lac	270177417	8/19/2023	15.5	30.1	Canada Wildfire Smoke
Grand Portage	270317810	8/19/2023	17.4	27.3	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/19/2023	20.5	46.1	Canada Wildfire Smoke
Marshall	270834210	8/19/2023	17.2	39	Canada Wildfire Smoke
Red Lake Nation	270072304	8/19/2023	22.3	63.6	Canada Wildfire Smoke
Virginia	271377001	8/19/2023	18.9	31.3	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average ($\mu\text{g}/\text{m}^3$)	Max hour ($\mu\text{g}/\text{m}^3$)	Notes
West Duluth	271377554	8/19/2023	16.5	25	Canada Wildfire Smoke
Apple Valley	270370470	8/20/2023	21.1	40	Canada Wildfire Smoke
Grand Portage	270317810	8/20/2023	15.3	28.6	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/20/2023	19.2	37.5	Canada Wildfire Smoke
Marshall	270834210	8/20/2023	19.9	49	Canada Wildfire Smoke
Rochester	271095008	8/20/2023	21.8	33.3	Canada Wildfire Smoke
Shakopee	271390505	8/20/2023	20.5	39.1	Canada Wildfire Smoke
St. Cloud	271453052	8/20/2023	19.3	44.2	Canada Wildfire Smoke
Apple Valley	270370470	8/21/2023	20.8	29.1	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/21/2023	18.7	24.7	Canada Wildfire Smoke
Marshall	270834210	8/21/2023	18.1	24	Canada Wildfire Smoke
Rochester	271095008	8/21/2023	22.6	27.9	Canada Wildfire Smoke
Shakopee	271390505	8/21/2023	21.0	29.3	Canada Wildfire Smoke
St. Cloud	271453052	8/21/2023	18.1	25.6	Canada Wildfire Smoke
St. Michael	271713201	8/21/2023	19.7	30	Canada Wildfire Smoke
Apple Valley	270370470	8/22/2023	20.4	26.8	Canada Wildfire Smoke
Rochester	271095008	8/22/2023	20.5	24.4	Canada Wildfire Smoke
Shakopee	271390505	8/22/2023	19.9	23	Canada Wildfire Smoke
St. Cloud	271453052	8/22/2023	18.6	25	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/22/2023	19.1	22.9	Canada Wildfire Smoke
Red Lake Nation	270072304	8/28/2023	16.7	36.2	Canada Wildfire Smoke
Apple Valley	270370470	8/29/2023	30.9	46.6	Canada Wildfire Smoke
Blaine	270031002	8/29/2023	25.8	39.5	Canada Wildfire Smoke
Brainerd	270353204	8/29/2023	28.7	49.7	Canada Wildfire Smoke
Detroit Lakes	270052013	8/29/2023	38.0	73.5	Canada Wildfire Smoke
Fargo NW	380171004	8/29/2023	42.5	79.5	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/29/2023	29.1	43.5	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/29/2023	29.0	43.8	Canada Wildfire Smoke
Marshall	270834210	8/29/2023	44.1	76.5	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	8/29/2023	30.5	44.8	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	8/29/2023	27.3	40.7	Canada Wildfire Smoke
Red Lake Nation	270072304	8/29/2023	30.5	41.5	Canada Wildfire Smoke
Rochester	271095008	8/29/2023	19.3	29	Canada Wildfire Smoke
Shakopee	271390505	8/29/2023	31.1	43.3	Canada Wildfire Smoke
St. Cloud	271453052	8/29/2023	34.6	48.7	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
St. Michael	271713201	8/29/2023	31.3	41.7	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/29/2023	24.1	38.8	Canada Wildfire Smoke
Detroit Lakes	270052013	8/30/2023	24.4	36.9	Canada Wildfire Smoke
Fargo NW	380171004	8/30/2023	33.8	47.3	Canada Wildfire Smoke
Marshall	270834210	8/30/2023	46.3	78	Canada Wildfire Smoke
Red Lake Nation	270072304	8/30/2023	15.6	19.4	Canada Wildfire Smoke
Detroit Lakes	270052013	8/31/2023	21.1	25.6	Canada Wildfire Smoke
Fargo NW	380171004	8/31/2023	22.3	25.4	Canada Wildfire Smoke
Marshall	270834210	8/31/2023	23.6	29.7	Canada Wildfire Smoke
Red Lake Nation	270072304	8/31/2023	20.7	26.4	Canada Wildfire Smoke
Red Lake Nation	270072304	9/1/2023	21.0	31.4	Canada Wildfire Smoke
Ely	270750005	9/2/2023	16.8	28.4	Canada Wildfire Smoke
Red Lake Nation	270072304	9/2/2023	23.9	39.7	Canada Wildfire Smoke
Virginia	271377001	9/2/2023	16.5	28.6	Canada Wildfire Smoke
Ely	270750005	9/3/2023	20.3	38.2	Canada Wildfire Smoke
Fargo NW	380171004	9/3/2023	24.2	37.2	Canada Wildfire Smoke
Grand Portage	270317810	9/3/2023	16.0	71.2	Canada Wildfire Smoke
Leech Lake Nation	270213410	9/3/2023	26.4	46.5	Canada Wildfire Smoke
Red Lake Nation	270072304	9/3/2023	31.1	52.3	Canada Wildfire Smoke
Virginia	271377001	9/3/2023	18.8	34.3	Canada Wildfire Smoke
West Duluth	271377554	9/3/2023	16.0	17	Canada Wildfire Smoke
Duluth-WDSE	271377550	9/4/2023	19.4	29	Canada Wildfire Smoke
Ely	270750005	9/4/2023	16.7	34.3	Canada Wildfire Smoke
Grand Portage	270317810	9/4/2023	32.4	73.6	Canada Wildfire Smoke
Leech Lake Nation	270213410	9/4/2023	18.1	41.5	Canada Wildfire Smoke
Red Lake Nation	270072304	9/4/2023	21.0	45.1	Canada Wildfire Smoke
Virginia	271377001	9/4/2023	18.6	34.5	Canada Wildfire Smoke
West Duluth	271377554	9/4/2023	20.9	36.7	Canada Wildfire Smoke
Detroit Lakes	270052013	9/5/2023	23.4	71.4	Canada Wildfire Smoke
Fargo NW	380171004	9/5/2023	55.1	110.7	Canada Wildfire Smoke
Marshall	270834210	9/5/2023	25.4	93.8	Canada Wildfire Smoke
Red Lake Nation	270072304	9/5/2023	24.8	66.4	Canada Wildfire Smoke
Brainerd	270353204	9/6/2023	25.6	35.9	Canada Wildfire Smoke
Detroit Lakes	270052013	9/6/2023	50.4	81.6	Canada Wildfire Smoke
Fargo NW	380171004	9/6/2023	33.7	70.1	Canada Wildfire Smoke
Leech Lake Nation	270213410	9/6/2023	36.8	55.8	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Marshall	270834210	9/6/2023	68.2	96.4	Canada Wildfire Smoke
Red Lake Nation	270072304	9/6/2023	52.4	74	Canada Wildfire Smoke
St. Cloud	271453052	9/6/2023	27.5	39.2	Canada Wildfire Smoke
Detroit Lakes	270052013	9/7/2023	19.2	28.8	Canada Wildfire Smoke
Fargo NW	380171004	9/7/2023	31.5	46	Canada Wildfire Smoke
Marshall	270834210	9/7/2023	36.2	68.7	Canada Wildfire Smoke
Detroit Lakes	270052013	9/8/2023	19.8	31.8	Canada Wildfire Smoke
Fargo NW	380171004	9/8/2023	23.9	37.7	Canada Wildfire Smoke
Marshall	270834210	9/8/2023	30.3	47.7	Canada Wildfire Smoke
Detroit Lakes	270052013	9/9/2023	20.5	31.7	Canada Wildfire Smoke
Marshall	270834210	9/9/2023	29.6	43.8	Canada Wildfire Smoke
Red Lake Nation	270072304	9/9/2023	19.4	24.8	Canada Wildfire Smoke
Detroit Lakes	270052013	9/10/2023	18.2	22.4	Canada Wildfire Smoke
Ely	270750005	9/10/2023	16.4	24.1	Canada Wildfire Smoke
Fargo NW	380171004	9/10/2023	20.3	23.1	Canada Wildfire Smoke
Leech Lake Nation	270213410	9/10/2023	18.6	21.7	Canada Wildfire Smoke
Marshall	270834210	9/10/2023	18.9	24.6	Canada Wildfire Smoke
Red Lake Nation	270072304	9/10/2023	20.2	24.1	Canada Wildfire Smoke
West Duluth	271377554	9/10/2023	16.8	27.4	Canada Wildfire Smoke
Marshall	270834210	9/11/2023	17.1	28.5	Canada Wildfire Smoke
Detroit Lakes	270052013	9/15/2023	19.9	32.9	Canada Wildfire Smoke
Fargo NW	380171004	9/15/2023	34.7	115.5	Canada Wildfire Smoke
Leech Lake Nation	270213410	9/15/2023	20.7	47.8	Canada Wildfire Smoke
Red Lake Nation	270072304	9/15/2023	21.5	51.9	Canada Wildfire Smoke
Apple Valley	270370470	9/16/2023	19.7	41.2	Canada Wildfire Smoke
Duluth-WDSE	271377550	9/16/2023	20.3	28.8	Canada Wildfire Smoke
Fargo NW	380171004	9/16/2023	23.8	97.1	Canada Wildfire Smoke
Fond du Lac	270177417	9/16/2023	18.7	32.4	Canada Wildfire Smoke
Marshall	270834210	9/16/2023	47.3	83.4	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	9/16/2023	19.9	36.5	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	9/16/2023	19.5	34.7	Canada Wildfire Smoke
Rochester	271095008	9/16/2023	19.3	36.1	Canada Wildfire Smoke
Shakopee	271390505	9/16/2023	19.3	37	Canada Wildfire Smoke
West Duluth	271377554	9/16/2023	18.3	29.3	Canada Wildfire Smoke
Marshall	270834210	9/18/2023	23.5	39.9	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Marshall	270834210	9/19/2023	19.2	27.9	Canada Wildfire Smoke
Detroit Lakes	270052013	9/20/2023	27.0	52	Canada Wildfire Smoke
Fargo NW	380171004	9/20/2023	36.6	51.9	Canada Wildfire Smoke
Red Lake Nation	270072304	9/20/2023	25.1	45.8	Canada Wildfire Smoke
Detroit Lakes	270052013	9/21/2023	18.4	23.8	Canada Wildfire Smoke
Fargo NW	380171004	9/21/2023	19.2	35.4	Canada Wildfire Smoke
Red Lake Nation	270072304	9/21/2023	26.4	36.2	Canada Wildfire Smoke
Red Lake Nation	270072304	9/22/2023	17.0	33.2	Canada Wildfire Smoke

2024

For 2024, there were 30 days with high smoke impacts (Table 13). Smoke from fires located throughout Canada impacted Minnesota monitors in mid-May, and various days from July 9 to September 12. Two monitors also experienced high particulate from fireworks on July 4. Daily satellite imagery, fire locations, and monitor data for each day from 2024 identified in Table 13 can be found in Appendix C.

Table 13: List of days for 2024 when 24-hour PM_{2.5} concentrations were influenced by wildfire smoke.

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	5/12/2024	24.3	107.5	Canada Wildfire Smoke
Blaine	270031002	5/12/2024	29.0	105.7	Canada Wildfire Smoke
Brainerd	270353204	5/12/2024	50.4	131.6	Canada Wildfire Smoke
Detroit Lakes	270052013	5/12/2024	57.3	116.3	Canada Wildfire Smoke
Duluth-WDSE	271377550	5/12/2024	39.0	94.5	Canada Wildfire Smoke
Ely	270750005	5/12/2024	39.4	153.6	Canada Wildfire Smoke
Fargo NW	380171004	5/12/2024	49.0	105	Canada Wildfire Smoke
Fond du Lac	270177417	5/12/2024	40.8	99	Canada Wildfire Smoke
Grand Portage	270317810	5/12/2024	50.5	144.8	Canada Wildfire Smoke
Lakeville - Near Road	270370480	5/12/2024	21.6	97.4	Canada Wildfire Smoke
Leech Lake Nation	270213410	5/12/2024	74.2	176.3	Canada Wildfire Smoke
Marshall	270834210	5/12/2024	33.4	94.5	Canada Wildfire Smoke
Minneapolis - Anderson	270530963	5/12/2024	25.7	100.3	Canada Wildfire Smoke
Minneapolis - East Phillips	270531904	5/12/2024	26.5	102.9	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	5/12/2024	25.0	96.1	Canada Wildfire Smoke
Red Lake Nation	270072304	5/12/2024	92.6	182.7	Canada Wildfire Smoke
Shakopee	271390505	5/12/2024	27.9	124.6	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
St. Cloud	271453052	5/12/2024	32.5	95.3	Canada Wildfire Smoke
St. Michael	271713201	5/12/2024	36.9	145.7	Canada Wildfire Smoke
St. Paul-Harding	271230871	5/12/2024	28.0	106.8	Canada Wildfire Smoke
Virginia	271377001	5/12/2024	40.7	116	Canada Wildfire Smoke
West Duluth	271377554	5/12/2024	37.8	101.2	Canada Wildfire Smoke
Apple Valley	270370470	5/13/2024	56.5	115.6	Canada Wildfire Smoke
Blaine	270031002	5/13/2024	45.1	113.9	Canada Wildfire Smoke
Brainerd	270353204	5/13/2024	15.0	67.5	Canada Wildfire Smoke
Detroit Lakes	270052013	5/13/2024	31.7	132.2	Canada Wildfire Smoke
Duluth-WDSE	271377550	5/13/2024	18.0	49.7	Canada Wildfire Smoke
Ely	270750005	5/13/2024	9.5	63.8	Canada Wildfire Smoke
Fargo NW	380171004	5/13/2024	13.4	41.2	Canada Wildfire Smoke
Fond du Lac	270177417	5/13/2024	15.7	48.5	Canada Wildfire Smoke
Grand Portage	270317810	5/13/2024	14.5	105.2	Canada Wildfire Smoke
Lakeville - Near Road	270370480	5/13/2024	50.5	104.3	Canada Wildfire Smoke
Leech Lake Nation	270213410	5/13/2024	9.3	67.8	Canada Wildfire Smoke
Marshall	270834210	5/13/2024	52.4	101.1	Canada Wildfire Smoke
Minneapolis - Anderson	270530963	5/13/2024	48.5	110.9	Canada Wildfire Smoke
Minneapolis - East Phillips	270531904	5/13/2024	48.9	110.9	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	5/13/2024	45.8	103	Canada Wildfire Smoke
Rochester	271095008	5/13/2024	61.9	88.7	Canada Wildfire Smoke
Shakopee	271390505	5/13/2024	50.5	113.7	Canada Wildfire Smoke
St. Cloud	271453052	5/13/2024	33.8	100.5	Canada Wildfire Smoke
St. Michael	271713201	5/13/2024	39.2	106.9	Canada Wildfire Smoke
St. Paul-Harding	271230871	5/13/2024	46.7	102.1	Canada Wildfire Smoke
West Duluth	271377554	5/13/2024	20.1	49.9	Canada Wildfire Smoke
Apple Valley	270370470	5/14/2024	16.2	25	Canada Wildfire Smoke
Lakeville - Near Road	270370480	5/14/2024	15.4	25	Canada Wildfire Smoke
Marshall	270834210	5/14/2024	19.2	31.7	Canada Wildfire Smoke
Rochester	271095008	5/14/2024	21.9	36.4	Canada Wildfire Smoke
Shakopee	271390505	5/14/2024	14.9	23.2	Canada Wildfire Smoke
Apple Valley	270370470	5/15/2024	15.1	30.5	Canada Wildfire Smoke
Marshall	270834210	5/15/2024	16.8	27.7	Canada Wildfire Smoke
Rochester	271095008	5/15/2024	17.0	30.7	Canada Wildfire Smoke
Minneapolis - Anderson	270530963	7/4/2024	23.1	163.5	Fireworks
St. Paul-Harding	271230871	7/4/2024	24.4	145.2	Fireworks
Duluth-WDSE	271377550	7/9/2024	18.9	26	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Fond du Lac	270177417	7/9/2024	15.9	22.4	Canada Wildfire Smoke
Virginia	271377001	7/9/2024	15.4	26.6	Canada Wildfire Smoke
West Duluth	271377554	7/9/2024	19.1	25.2	Canada Wildfire Smoke
Red Lake Nation	270072304	7/11/2024	16.5	22.8	Canada Wildfire Smoke
Red Lake Nation	270072304	7/20/2024	16.1	25.5	Canada Wildfire Smoke
Virginia	271377001	7/20/2024	19.9	33.2	Canada Wildfire Smoke
Detroit Lakes	270052013	7/21/2024	17.9	21.3	Canada Wildfire Smoke
Fargo NW	380171004	7/21/2024	17.1	21	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/21/2024	17.3	19.1	Canada Wildfire Smoke
Red Lake Nation	270072304	7/21/2024	23.8	32.6	Canada Wildfire Smoke
St. Cloud	271453052	7/21/2024	16.8	21.4	Canada Wildfire Smoke
Brainerd	270353204	7/22/2024	16.6	19.9	Canada Wildfire Smoke
Detroit Lakes	270052013	7/22/2024	22.5	29.1	Canada Wildfire Smoke
Fargo NW	380171004	7/22/2024	25.1	29	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/22/2024	15.7	22	Canada Wildfire Smoke
Marshall	270834210	7/22/2024	16.0	25.5	Canada Wildfire Smoke
Red Lake Nation	270072304	7/22/2024	20.6	28	Canada Wildfire Smoke
Rochester	271095008	7/22/2024	18.4	28.6	Canada Wildfire Smoke
Shakopee	271390505	7/22/2024	17.4	26.8	Canada Wildfire Smoke
Mankato - RosaP	270135510	7/23/2024	16.8	21.7	Canada Wildfire Smoke
Marshall	270834210	7/23/2024	18.8	24.7	Canada Wildfire Smoke
Rochester	271095008	7/23/2024	17.9	28	Canada Wildfire Smoke
Detroit Lakes	270052013	7/26/2024	18.4	22	Canada Wildfire Smoke
Fargo NW	380171004	7/26/2024	19.5	24	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/26/2024	18.0	19.1	Canada Wildfire Smoke
Mankato - RosaP	270135510	7/26/2024	16.5	19.2	Canada Wildfire Smoke
Marshall	270834210	7/26/2024	18.1	23.2	Canada Wildfire Smoke
Minneapolis - East Phillips	270531904	7/26/2024	17.2	20.3	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	7/26/2024	17.2	33	Canada Wildfire Smoke
Red Lake Nation	270072304	7/26/2024	20.6	23	Canada Wildfire Smoke
Rochester	271095008	7/26/2024	16.1	18.3	Canada Wildfire Smoke
Shakopee	271390505	7/26/2024	16.9	20.2	Canada Wildfire Smoke
St. Cloud	271453052	7/26/2024	16.8	19.3	Canada Wildfire Smoke
St. Michael	271713201	7/26/2024	16.5	18.4	Canada Wildfire Smoke
St. Paul-Harding	271230871	7/26/2024	15.3	18.6	Canada Wildfire Smoke
Virginia	271377001	7/26/2024	17.5	22.6	Canada Wildfire Smoke
West Duluth	271377554	7/26/2024	14.5	18.5	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	7/27/2024	20.4	24.1	Canada Wildfire Smoke
Blaine	270031002	7/27/2024	16.8	19.1	Canada Wildfire Smoke
Brainerd	270353204	7/27/2024	17.4	19.6	Canada Wildfire Smoke
Detroit Lakes	270052013	7/27/2024	20.5	24.5	Canada Wildfire Smoke
Duluth-WDSE	271377550	7/27/2024	20.3	24.1	Canada Wildfire Smoke
Ely	270750005	7/27/2024	18.8	21.4	Canada Wildfire Smoke
Fargo NW	380171004	7/27/2024	21.7	26	Canada Wildfire Smoke
Fond du Lac	270177417	7/27/2024	16.6	20.1	Canada Wildfire Smoke
Grand Portage	270317810	7/27/2024	14.7	15.8	Canada Wildfire Smoke
Lakeville - Near Road	270370480	7/27/2024	16.8	19.4	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/27/2024	19.6	22.2	Canada Wildfire Smoke
Mankato - RosaP	270135510	7/27/2024	20.3	24.2	Canada Wildfire Smoke
Marshall	270834210	7/27/2024	18.1	21.3	Canada Wildfire Smoke
Minneapolis - Anderson	270530963	7/27/2024	18.9	21.7	Canada Wildfire Smoke
Minneapolis - East Phillips	270531904	7/27/2024	20.0	22.7	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	7/27/2024	19.0	38.1	Canada Wildfire Smoke
Red Lake Nation	270072304	7/27/2024	19.7	25.4	Canada Wildfire Smoke
Rochester	271095008	7/27/2024	19.8	23.4	Canada Wildfire Smoke
Shakopee	271390505	7/27/2024	19.6	23.1	Canada Wildfire Smoke
St. Cloud	271453052	7/27/2024	18.8	21.3	Canada Wildfire Smoke
St. Michael	271713201	7/27/2024	18.8	21.8	Canada Wildfire Smoke
St. Paul-Harding	271230871	7/27/2024	19.3	22.2	Canada Wildfire Smoke
Virginia	271377001	7/27/2024	21.7	25.5	Canada Wildfire Smoke
West Duluth	271377554	7/27/2024	20.0	23.8	Canada Wildfire Smoke
Duluth-WDSE	271377550	7/28/2024	15.5	21.3	Canada Wildfire Smoke
Grand Portage	270317810	7/28/2024	17.2	18.7	Canada Wildfire Smoke
Rochester	271095008	7/28/2024	18.2	23.7	Canada Wildfire Smoke
Virginia	271377001	7/28/2024	16.0	23	Canada Wildfire Smoke
Duluth-WDSE	271377550	7/29/2024	15.8	30.9	Canada Wildfire Smoke
Ely	270750005	7/29/2024	15.1	25.8	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/29/2024	23.5	30	Canada Wildfire Smoke
Red Lake Nation	270072304	7/29/2024	27.4	37.3	Canada Wildfire Smoke
Virginia	271377001	7/29/2024	18.8	28.3	Canada Wildfire Smoke
West Duluth	271377554	7/29/2024	14.9	28.5	Canada Wildfire Smoke
Duluth-WDSE	271377550	7/30/2024	21.6	27	Canada Wildfire Smoke
Ely	270750005	7/30/2024	18.6	19.5	Canada Wildfire Smoke
Fond du Lac	270177417	7/30/2024	16.5	20.8	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Grand Portage	270317810	7/30/2024	14.7	20.4	Canada Wildfire Smoke
Red Lake Nation	270072304	7/30/2024	15.9	30	Canada Wildfire Smoke
Virginia	271377001	7/30/2024	20.9	26.1	Canada Wildfire Smoke
West Duluth	271377554	7/30/2024	21.6	26.9	Canada Wildfire Smoke
Grand Portage	270317810	7/31/2024	14.4	18.7	Canada Wildfire Smoke
Virginia	271377001	7/31/2024	14.5	19.4	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/12/2024	19.5	29.1	Canada Wildfire Smoke
Ely	270750005	8/12/2024	34.8	51.7	Canada Wildfire Smoke
Fond du Lac	270177417	8/12/2024	11.8	18.1	Canada Wildfire Smoke
Grand Portage	270317810	8/12/2024	22.1	28.5	Canada Wildfire Smoke
Virginia	271377001	8/12/2024	26.8	43.1	Canada Wildfire Smoke
West Duluth	271377554	8/12/2024	16.5	26	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/13/2024	35.7	44.3	Canada Wildfire Smoke
Ely	270750005	8/13/2024	26.1	35.6	Canada Wildfire Smoke
Fond du Lac	270177417	8/13/2024	17.9	28.5	Canada Wildfire Smoke
Grand Portage	270317810	8/13/2024	45.2	52.7	Canada Wildfire Smoke
Virginia	271377001	8/13/2024	24.1	33.2	Canada Wildfire Smoke
West Duluth	271377554	8/13/2024	35.3	43.6	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/14/2024	31.3	43.2	Canada Wildfire Smoke
Ely	270750005	8/14/2024	24.4	38.4	Canada Wildfire Smoke
Fond du Lac	270177417	8/14/2024	20.2	31.1	Canada Wildfire Smoke
Grand Portage	270317810	8/14/2024	35.6	48.4	Canada Wildfire Smoke
Virginia	271377001	8/14/2024	22.3	36.6	Canada Wildfire Smoke
West Duluth	271377554	8/14/2024	35.7	43.6	Canada Wildfire Smoke
Detroit Lakes	270052013	8/17/2024	16.0	42.4	Canada Wildfire Smoke
Ely	270750005	8/17/2024	19.5	42.7	Canada Wildfire Smoke
Fargo NW	380171004	8/17/2024	27.9	58	Canada Wildfire Smoke
Grand Portage	270317810	8/17/2024	24.0	50.1	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/17/2024	16.7	31.9	Canada Wildfire Smoke
Red Lake Nation	270072304	8/17/2024	17.9	32.9	Canada Wildfire Smoke
Virginia	271377001	8/17/2024	16.0	30.7	Canada Wildfire Smoke
Apple Valley	270370470	8/18/2024	29.8	45.9	Canada Wildfire Smoke
Blaine	270031002	8/18/2024	27.0	35.3	Canada Wildfire Smoke
Brainerd	270353204	8/18/2024	29.3	35.1	Canada Wildfire Smoke
Detroit Lakes	270052013	8/18/2024	21.3	31.6	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/18/2024	28.0	40.7	Canada Wildfire Smoke
Ely	270750005	8/18/2024	25.7	42.3	Canada Wildfire Smoke
Fargo NW	380171004	8/18/2024	23.3	32	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Fond du Lac	270177417	8/18/2024	25.0	32.4	Canada Wildfire Smoke
Grand Portage	270317810	8/18/2024	28.6	44	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/18/2024	24.8	36.5	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/18/2024	33.0	37.3	Canada Wildfire Smoke
Mankato - RosaP	270135510	8/18/2024	22.6	34	Canada Wildfire Smoke
Minneapolis - Anderson	270530963	8/18/2024	27.4	37.1	Canada Wildfire Smoke
Minneapolis - East Phillips	270531904	8/18/2024	28.4	38.1	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	8/18/2024	27.9	40.6	Canada Wildfire Smoke
Red Lake Nation	270072304	8/18/2024	35.2	42.3	Canada Wildfire Smoke
Rochester	271095008	8/18/2024	24.0	38.9	Canada Wildfire Smoke
Shakopee	271390505	8/18/2024	26.9	40.8	Canada Wildfire Smoke
St. Cloud	271453052	8/18/2024	30.4	36.2	Canada Wildfire Smoke
St. Michael	271713201	8/18/2024	27.0	35.4	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/18/2024	28.2	42.7	Canada Wildfire Smoke
Virginia	271377001	8/18/2024	26.1	38.2	Canada Wildfire Smoke
West Duluth	271377554	8/18/2024	29.9	40.9	Canada Wildfire Smoke
Apple Valley	270370470	8/19/2024	25.2	30.8	Canada Wildfire Smoke
Blaine	270031002	8/19/2024	24.2	29.6	Canada Wildfire Smoke
Brainerd	270353204	8/19/2024	26.0	31.3	Canada Wildfire Smoke
Detroit Lakes	270052013	8/19/2024	24.7	32.2	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/19/2024	16.1	25.3	Canada Wildfire Smoke
Ely	270750005	8/19/2024	15.9	27.4	Canada Wildfire Smoke
Fargo NW	380171004	8/19/2024	25.2	30	Canada Wildfire Smoke
Fond du Lac	270177417	8/19/2024	15.1	21	Canada Wildfire Smoke
Grand Portage	270317810	8/19/2024	9.6	22.8	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/19/2024	22.1	26.4	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/19/2024	33.7	38	Canada Wildfire Smoke
Mankato - RosaP	270135510	8/19/2024	24.2	32	Canada Wildfire Smoke
Marshall	270834210	8/19/2024	22.9	29.6	Canada Wildfire Smoke
Minneapolis - Anderson	270530963	8/19/2024	25.1	28.4	Canada Wildfire Smoke
Minneapolis - East Phillips	270531904	8/19/2024	25.8	32.9	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	8/19/2024	24.6	30.9	Canada Wildfire Smoke
Red Lake Nation	270072304	8/19/2024	34.1	38	Canada Wildfire Smoke
Rochester	271095008	8/19/2024	24.0	32.9	Canada Wildfire Smoke
Shakopee	271390505	8/19/2024	26.5	35.3	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
St. Cloud	271453052	8/19/2024	27.5	32.9	Canada Wildfire Smoke
St. Michael	271713201	8/19/2024	26.9	32.4	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/19/2024	25.9	44.3	Canada Wildfire Smoke
Virginia	271377001	8/19/2024	18.6	28.6	Canada Wildfire Smoke
West Duluth	271377554	8/19/2024	17.0	29.6	Canada Wildfire Smoke
Apple Valley	270370470	8/20/2024	21.0	26.2	Canada Wildfire Smoke
Blaine	270031002	8/20/2024	16.6	27	Canada Wildfire Smoke
Brainerd	270353204	8/20/2024	19.2	25.7	Canada Wildfire Smoke
Detroit Lakes	270052013	8/20/2024	21.0	26.2	Canada Wildfire Smoke
Fargo NW	380171004	8/20/2024	22.8	27	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/20/2024	17.6	22.7	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/20/2024	19.9	26.7	Canada Wildfire Smoke
Mankato - RosaP	270135510	8/20/2024	21.1	25.5	Canada Wildfire Smoke
Marshall	270834210	8/20/2024	17.4	22.2	Canada Wildfire Smoke
Minneapolis - Anderson	270530963	8/20/2024	18.9	27.3	Canada Wildfire Smoke
Minneapolis - East Phillips	270531904	8/20/2024	19.5	30.1	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	8/20/2024	17.8	27.7	Canada Wildfire Smoke
Red Lake Nation	270072304	8/20/2024	24.8	30.6	Canada Wildfire Smoke
Rochester	271095008	8/20/2024	18.7	25.2	Canada Wildfire Smoke
Shakopee	271390505	8/20/2024	20.5	24.4	Canada Wildfire Smoke
St. Cloud	271453052	8/20/2024	22.9	27.5	Canada Wildfire Smoke
St. Michael	271713201	8/20/2024	21.5	25.7	Canada Wildfire Smoke
Detroit Lakes	270052013	8/21/2024	17.3	20.8	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/21/2024	18.3	22	Canada Wildfire Smoke
Red Lake Nation	270072304	8/21/2024	19.2	20.4	Canada Wildfire Smoke
Brainerd	270353204	9/1/2024	24.5	42.9	Canada Wildfire Smoke
Detroit Lakes	270052013	9/1/2024	22.8	30	Canada Wildfire Smoke
Leech Lake Nation	270213410	9/1/2024	27.1	50.8	Canada Wildfire Smoke
Red Lake Nation	270072304	9/1/2024	36.3	64.1	Canada Wildfire Smoke
St. Cloud	271453052	9/1/2024	20.1	49.4	Canada Wildfire Smoke
Brainerd	270353204	9/2/2024	22.0	46.5	Canada Wildfire Smoke
Detroit Lakes	270052013	9/2/2024	16.0	27.2	Canada Wildfire Smoke
Duluth-WDSE	271377550	9/2/2024	15.1	24.6	Canada Wildfire Smoke
Ely	270750005	9/2/2024	15.8	22.6	Canada Wildfire Smoke
Fond du Lac	270177417	9/2/2024	14.5	27.2	Canada Wildfire Smoke
Leech Lake Nation	270213410	9/2/2024	31.9	65.1	Canada Wildfire Smoke
Red Lake Nation	270072304	9/2/2024	36.7	85.1	Canada Wildfire Smoke

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
St. Cloud	271453052	9/2/2024	18.4	47.6	Canada Wildfire Smoke
Virginia	271377001	9/2/2024	23.2	37.9	Canada Wildfire Smoke
West Duluth	271377554	9/2/2024	15.2	24.4	Canada Wildfire Smoke
Fargo NW	380171004	9/10/2024	17.1	57	US+Canada Wildfire Smoke
Detroit Lakes	270052013	9/11/2024	39.9	86.6	US+Canada Wildfire Smoke
Fargo NW	380171004	9/11/2024	64.5	126	US+Canada Wildfire Smoke
Red Lake Nation	270072304	9/11/2024	36.6	59.6	US+Canada Wildfire Smoke
Apple Valley	270370470	9/12/2024	18.8	25.5	US+Canada Wildfire Smoke
Mankato - RosaP	270135510	9/12/2024	17.0	22.1	US+Canada Wildfire Smoke
Marshall	270834210	9/12/2024	16.1	23	US+Canada Wildfire Smoke
Rochester	271095008	9/12/2024	17.8	21.7	US+Canada Wildfire Smoke
Shakopee	271390505	9/12/2024	21.3	29.4	US+Canada Wildfire Smoke

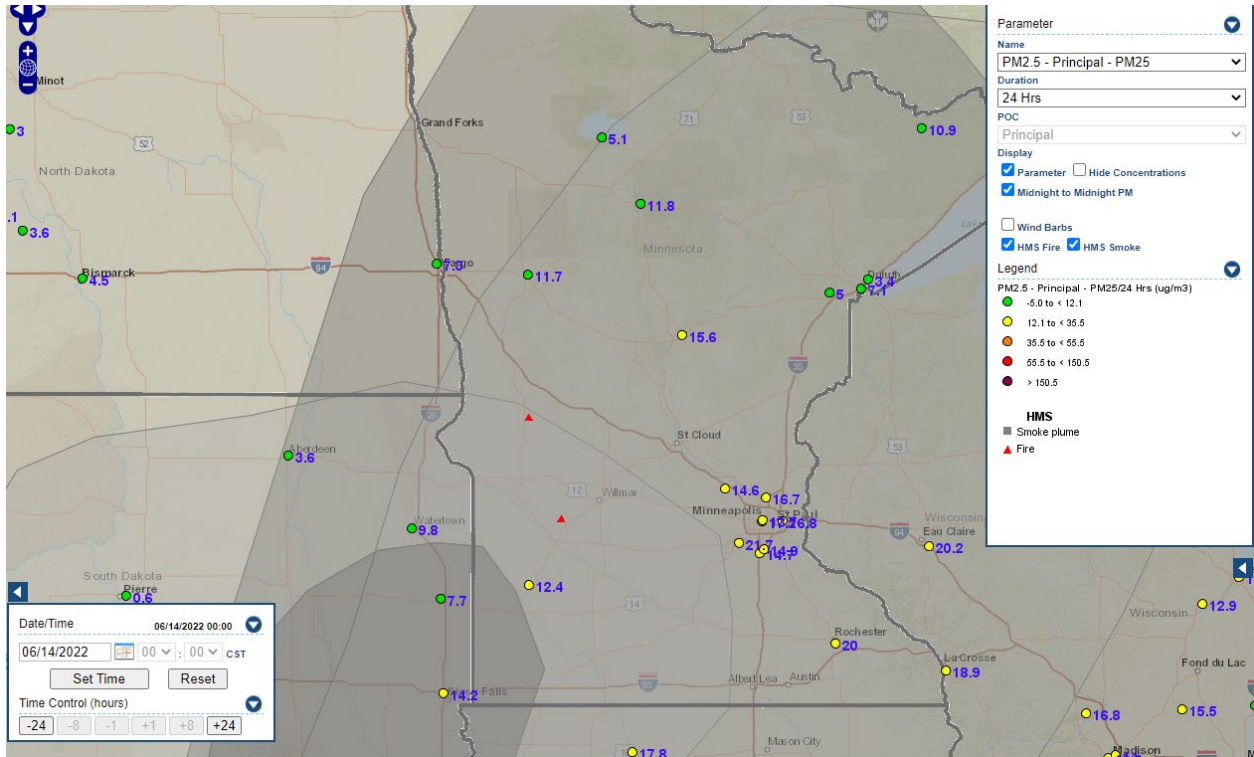
Appendix A – Daily fire impacts for 2022

6/14/2022 Impacts

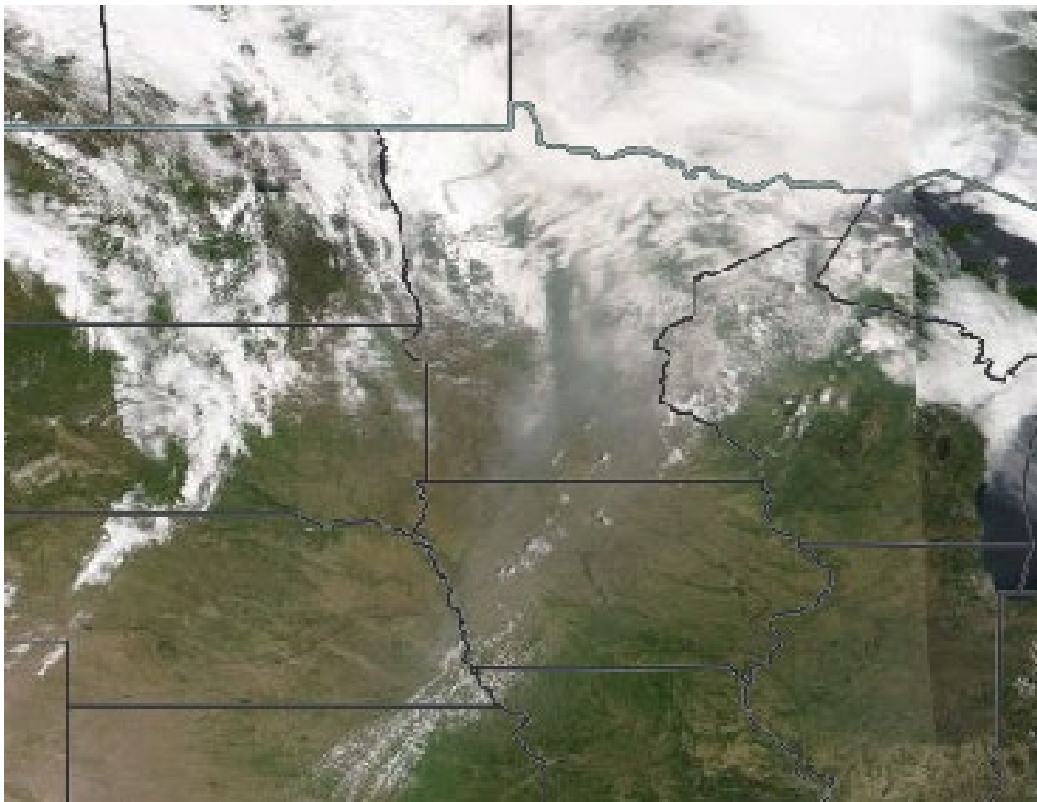
Smoke impacts from wildfires in the southwestern US.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 14, 2022.

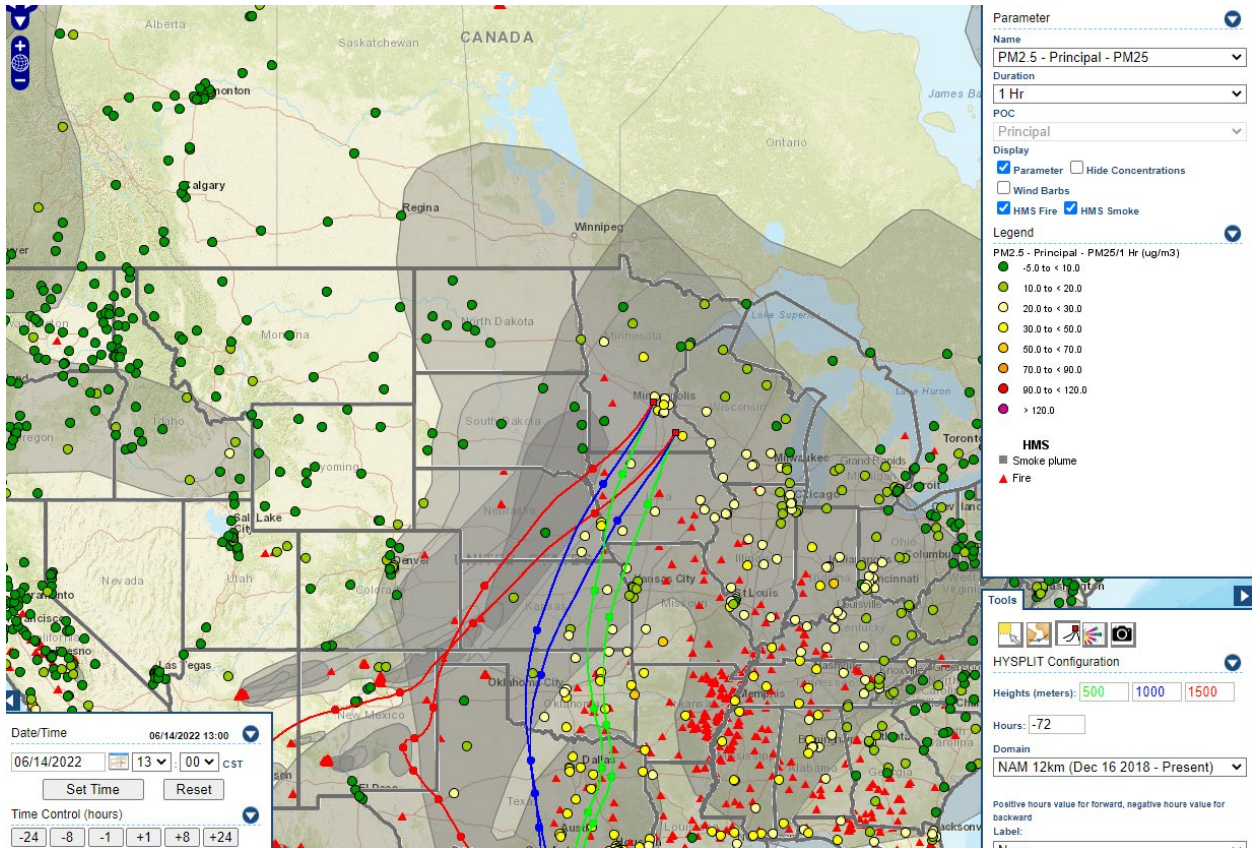
Site	Site AQS	Date (LST)	Daily Average (µg/m ³)	Max Hour (µg/m ³)	Notes
Apple Valley	270370470	6/14/2022	14.96	27	Smoke from southwest US wildfires
Blaine	270031002	6/14/2022	16.71	30	Smoke from southwest US wildfires
Brainerd	270353204	6/14/2022	15.63	34	Smoke from southwest US wildfires
Detroit Lakes	270052013	6/14/2022	11.71	28	Smoke from southwest US wildfires
Ely	270750005	6/14/2022	10.91	18	Smoke from southwest US wildfires
LACROSSE DOT	550630012	6/14/2022	18.91	24.3	Smoke from southwest US wildfires
Lakeville – Near Road	270370480	6/14/2022	14.75	29	Smoke from southwest US wildfires
Leech Lake Nation	270213410	6/14/2022	11.83	33	Smoke from southwest US wildfires
Marshall	270834210	6/14/2022	12.42	31	Smoke from southwest US wildfires
Minneapolis - Near Road	270530962	6/14/2022	13.75	27	Smoke from southwest US wildfires
Minneapolis-Phillips	270530963	6/14/2022	17.25	33	Smoke from southwest US wildfires
Rochester	271095008	6/14/2022	20.04	38	Smoke from southwest US wildfires
Shakopee	271390505	6/14/2022	21.77	43	Smoke from southwest US wildfires
St. Michael	271713201	6/14/2022	14.63	29	Smoke from southwest US wildfires
St. Paul-Harding	271230871	6/14/2022	16.87	32	Smoke from southwest US wildfires



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 14, 2022.



MODIS visible satellite for June 14, 2022.



Backward trajectories for June 14, 2022.

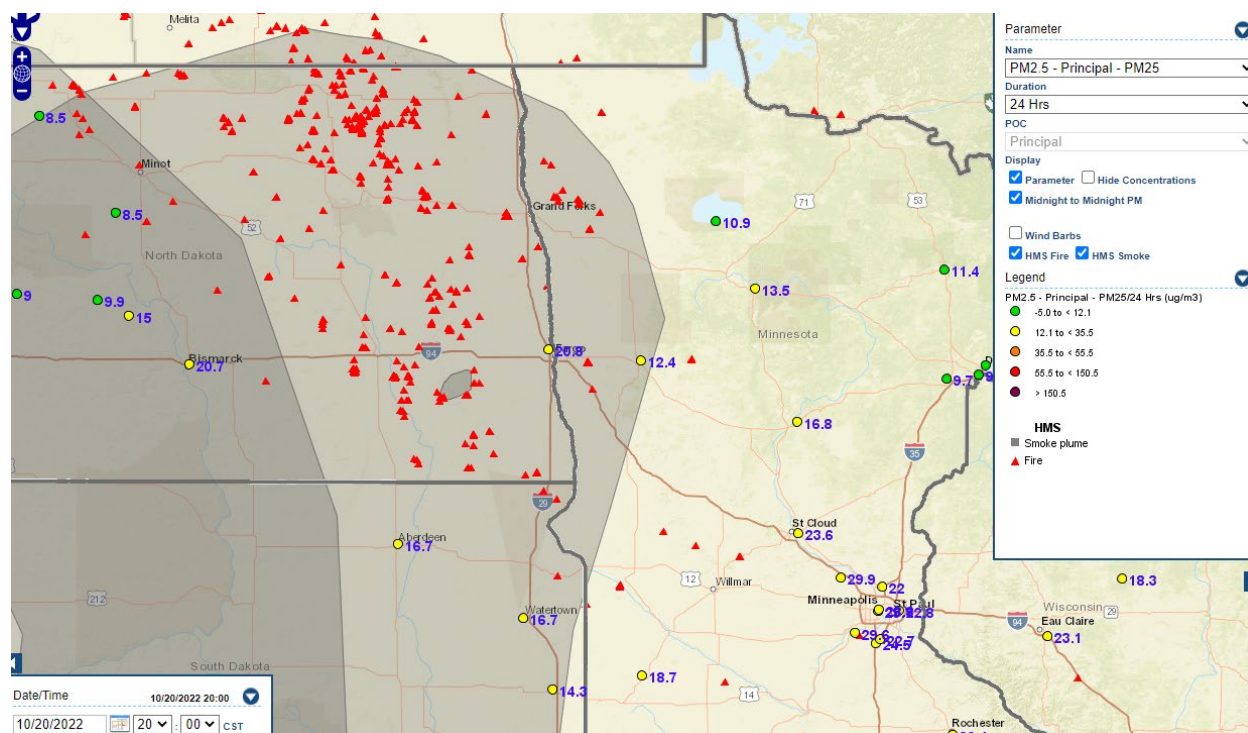
10/20/2022 Impacts

Smoke impacts from wildfires in western Canada. Agricultural and prescribed burning in North Dakota and southern Canada may have also contributed smoke.

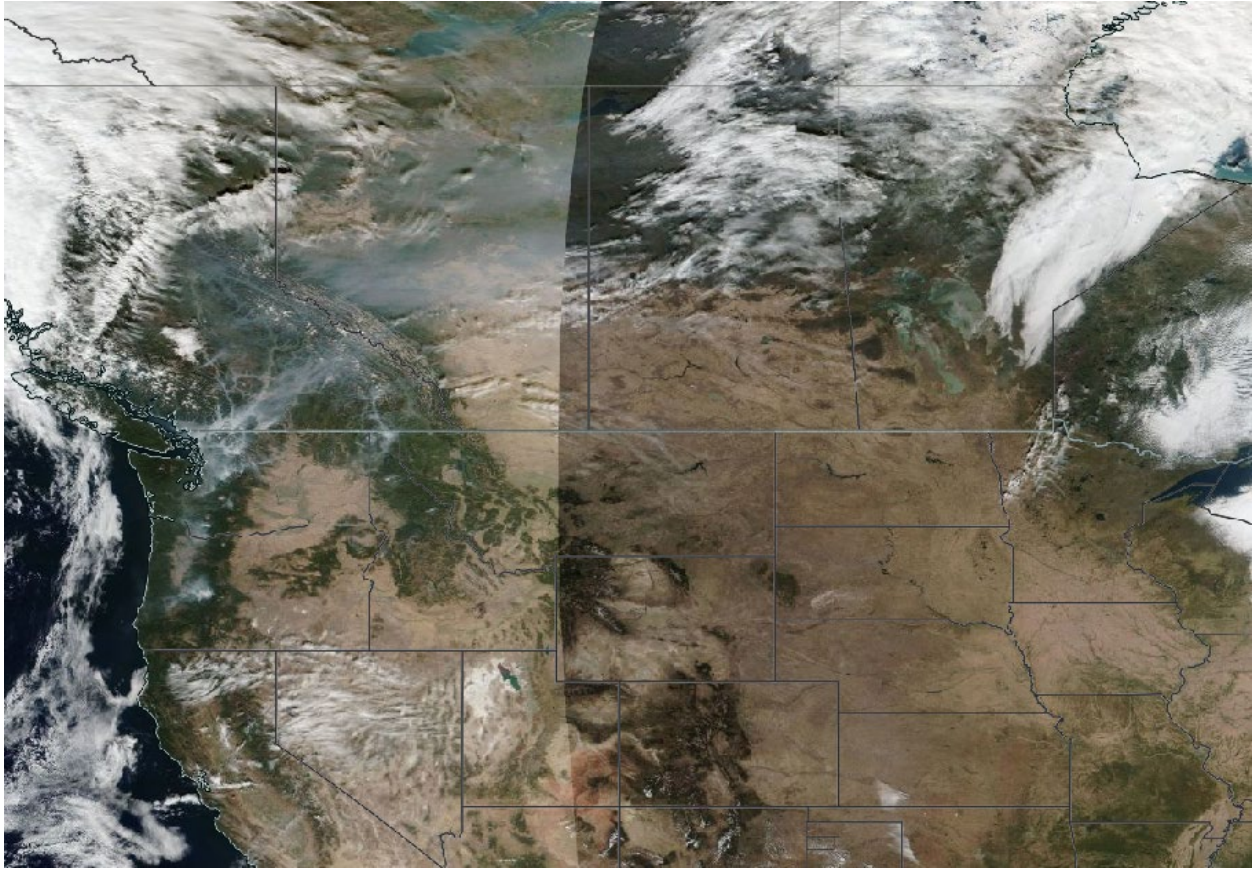
Monitored 24-hour PM_{2.5} concentrations impacted by smoke on October 20, 2022.

Site	Site AQS	Date (LST)	Daily Average (µg/m ³)	Max Hour (µg/m ³)	Notes
Apple Valley	270370470	10/20/2022	14.98	23	Canada Wildfire Smoke
Blaine	270031002	10/20/2022	11.87	20	Canada Wildfire Smoke
Brainerd	270353204	10/20/2022	11.82	18.3	Canada Wildfire Smoke
Detroit Lakes	270052013	10/20/2022	12.82	20	Canada Wildfire Smoke
Fargo NW	380171004	10/20/2022	31.78	45.1	Canada Wildfire Smoke
LACROSSE DOT	550630012	10/20/2022	13.47	18.5	Canada Wildfire Smoke
Lakeville – Near Road	270370480	10/20/2022	15.74	26.6	Canada Wildfire Smoke
Leech Lake Nation	270213410	10/20/2022	13.21	19	Canada Wildfire Smoke
Marshall	270834210	10/20/2022	17.54	27	Canada Wildfire Smoke

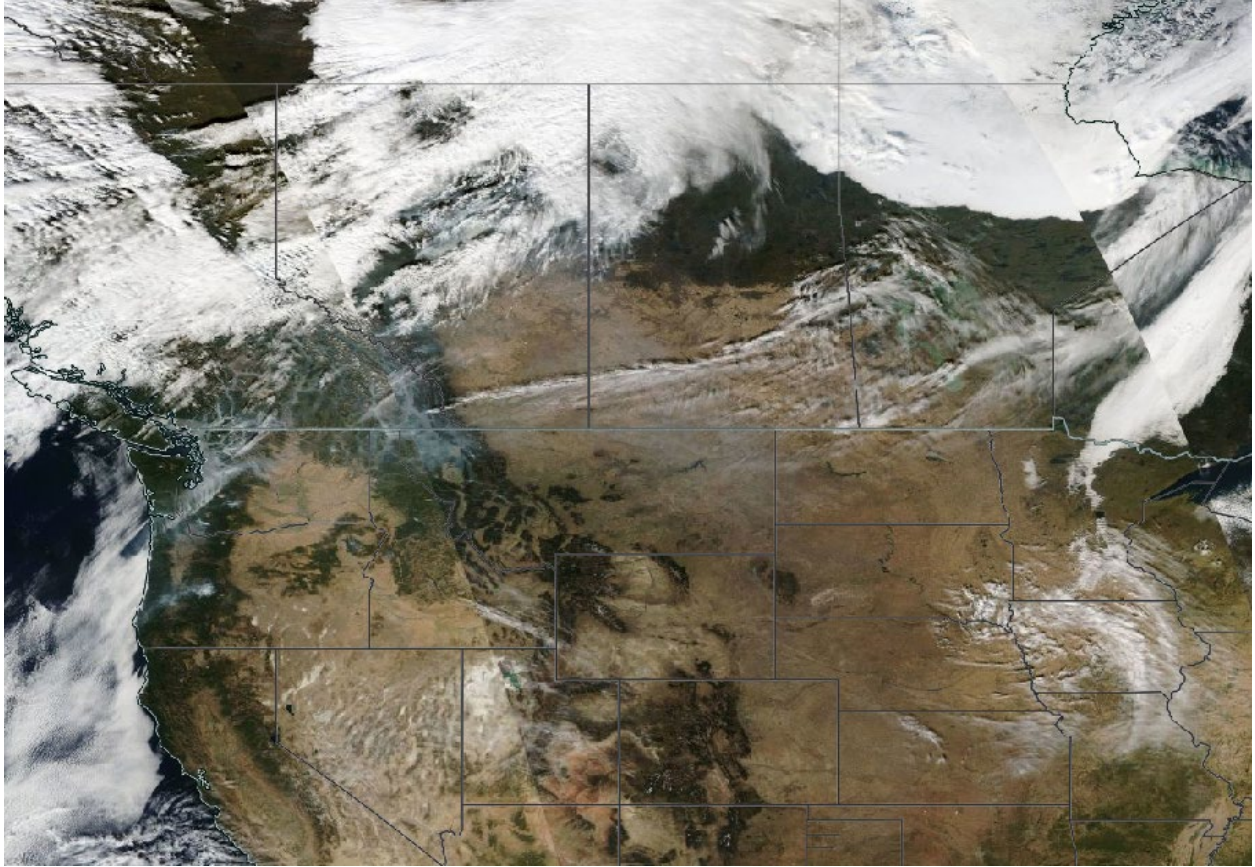
Site	Site AQS	Date (LST)	Daily Average ($\mu\text{g}/\text{m}^3$)	Max Hour ($\mu\text{g}/\text{m}^3$)	Notes
Minneapolis - Near Road	270530962	10/20/2022	19.22	72.4	Canada Wildfire Smoke
Minneapolis-Phillips	270530963	10/20/2022	16.37	25.9	Canada Wildfire Smoke
Red Lake Nation	270072304	10/20/2022	9.38	17	Canada Wildfire Smoke
Rochester	271095008	10/20/2022	17.93	32.3	Canada Wildfire Smoke
Shakopee	271390505	10/20/2022	17.3	26.9	Canada Wildfire Smoke
St. Cloud	271453052	10/20/2022	14.64	26.8	Canada Wildfire Smoke
St. Michael	271713201	10/20/2022	14.77	24.4	Canada Wildfire Smoke
St. Paul-Harding	271230871	10/20/2022	12.46	21	Canada Wildfire Smoke



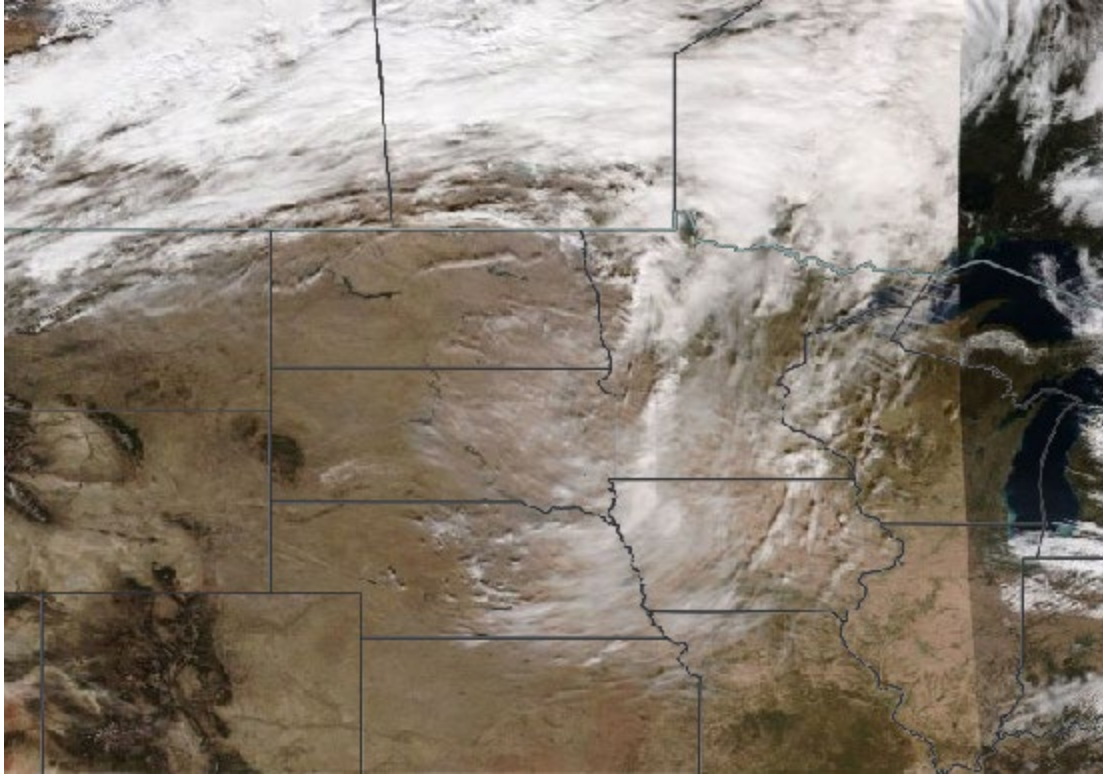
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on October 20, 2022.



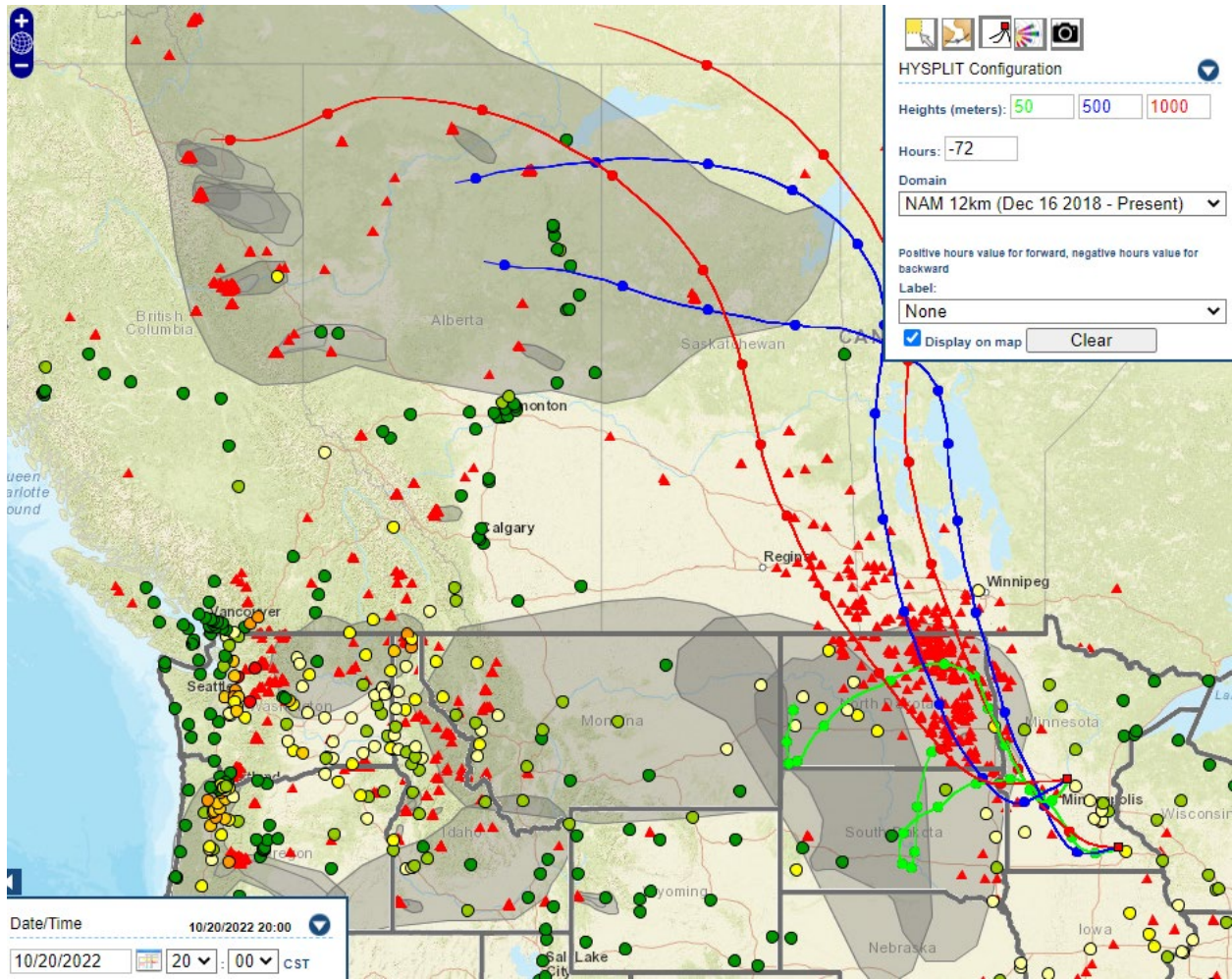
MODIS visible satellite for October 18, 2022.



MODIS visible satellite for October 19, 2022.



MODIS visible satellite for October 20, 2022.



Backward trajectories for October 20, 2022.

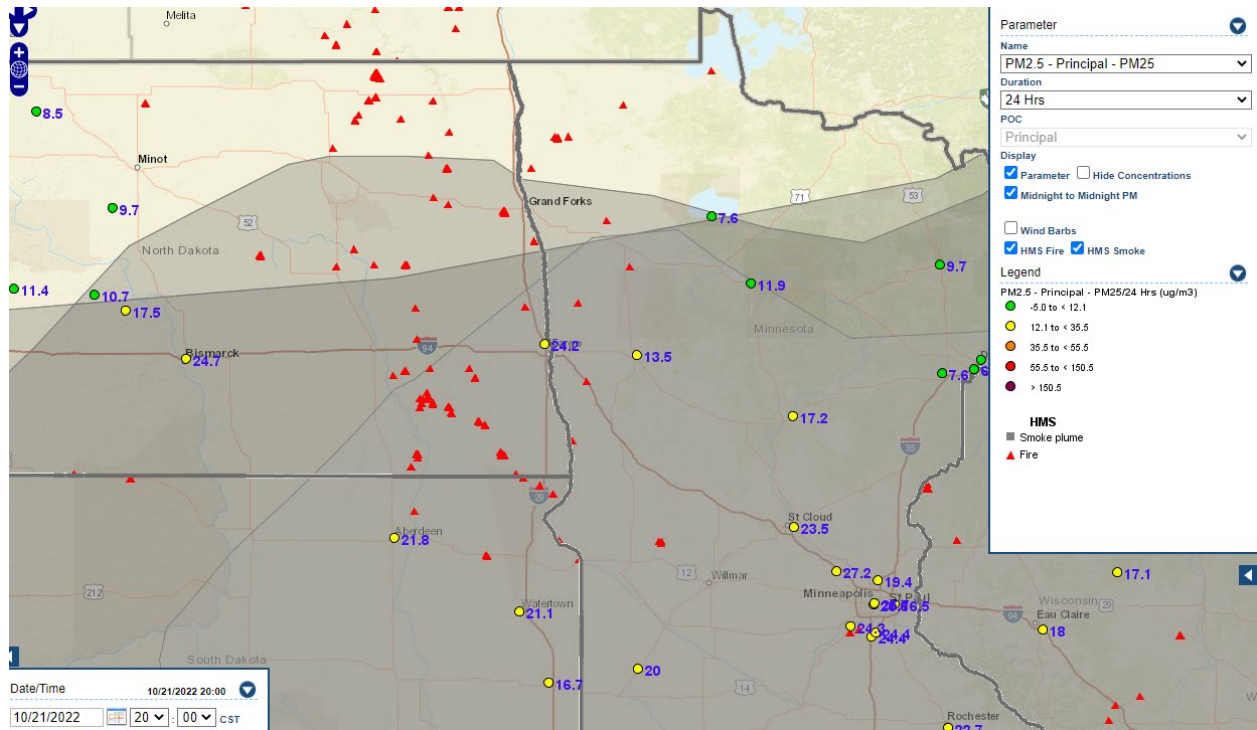
10/21/2022 Impacts

Smoke impacts from wildfires in western Canada. Agricultural and prescribed burning in North Dakota and southern Canada may have also contributed smoke.

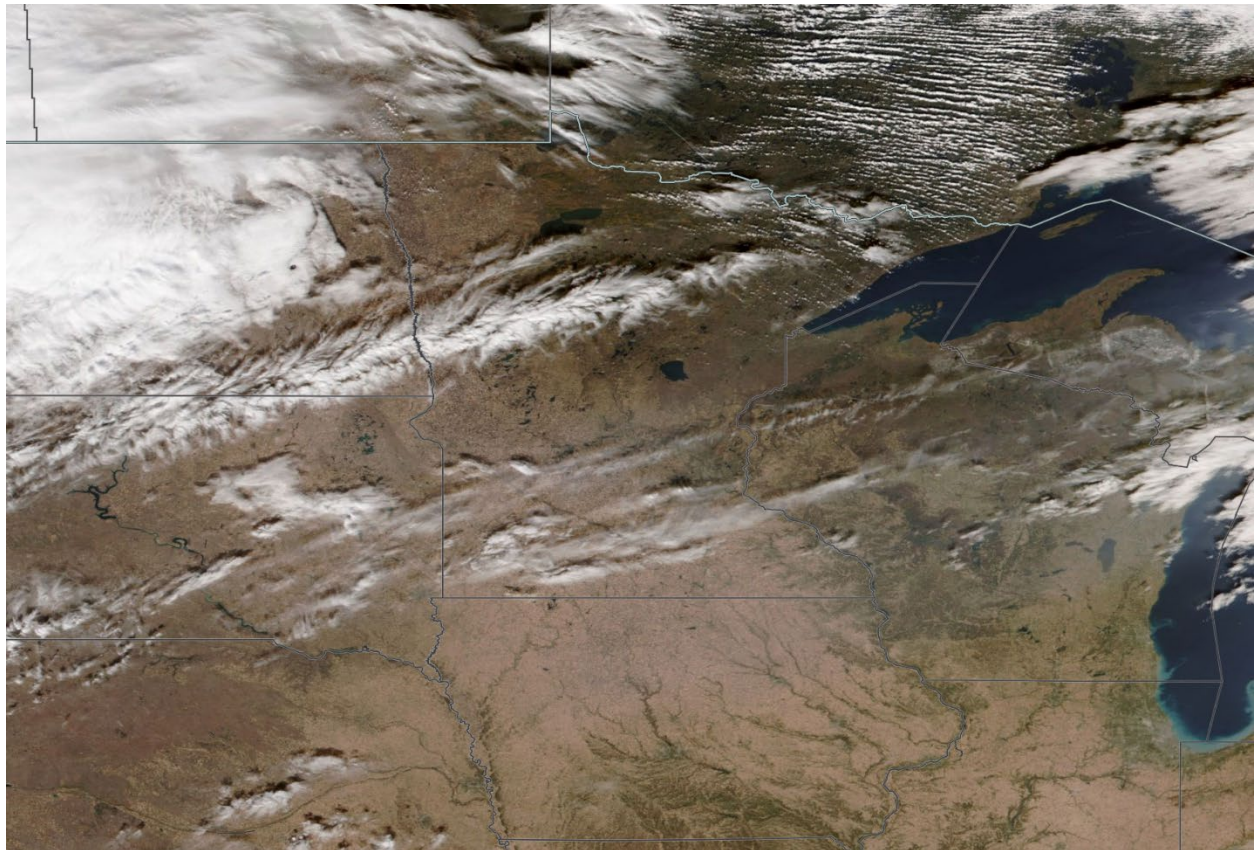
Monitored 24-hour PM_{2.5} concentrations impacted by smoke on October 21, 2022.

Site	Site AQS	Date (LST)	Daily Average (µg/m ³)	Max Hour (µg/m ³)	Notes
Apple Valley	270370470	10/21/2022	22.78	34.3	Canada Wildfire Smoke
Blaine	270031002	10/21/2022	22.08	45	Canada Wildfire Smoke
Brainerd	270353204	10/21/2022	16.82	25.3	Canada Wildfire Smoke
Detroit Lakes	270052013	10/21/2022	12.42	25	Canada Wildfire Smoke
Duluth-WDSE	271377550	10/21/2022	12.04	41	Canada Wildfire Smoke
Ely	270750005	10/21/2022	9	19	Canada Wildfire Smoke

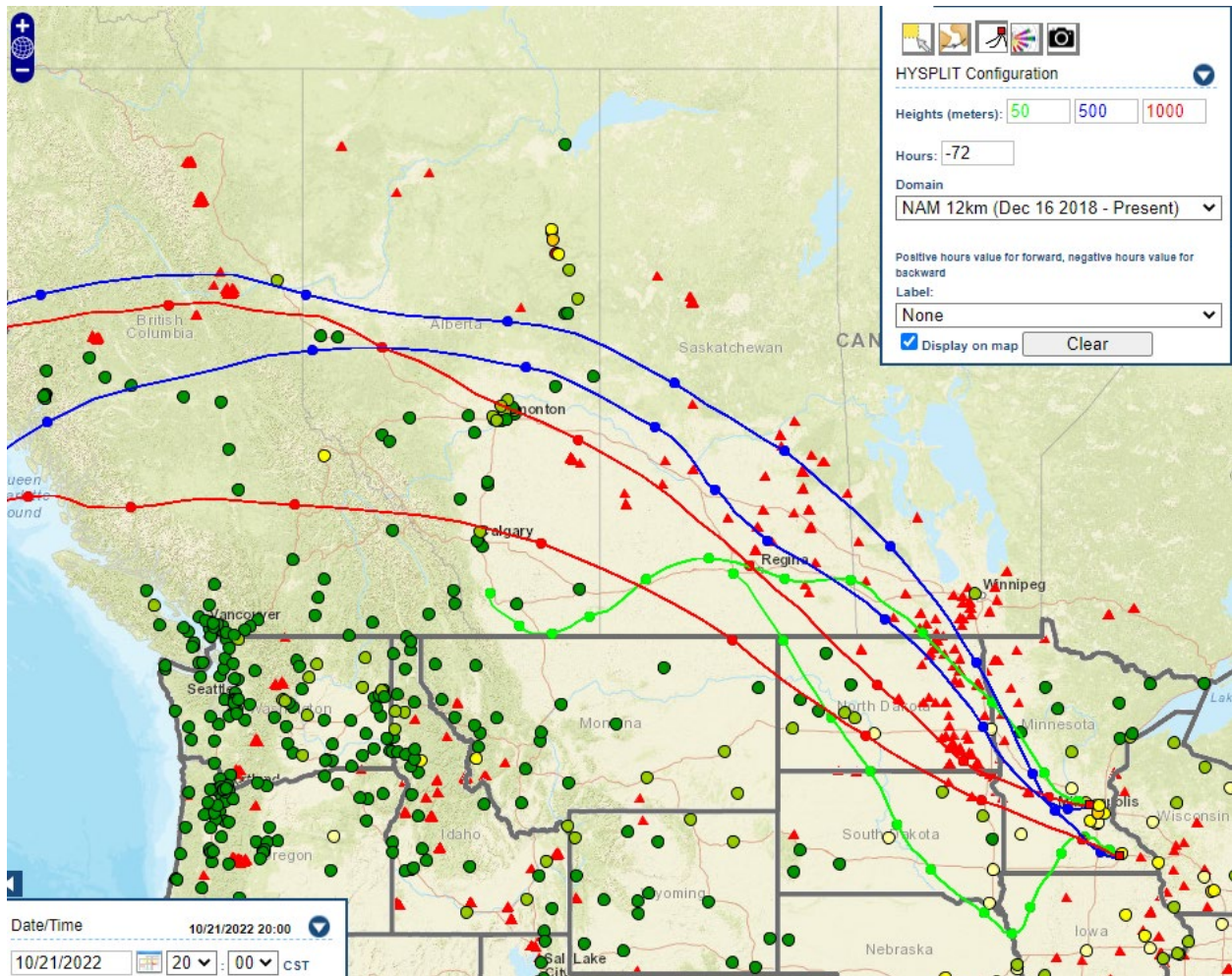
Site	Site AQS	Date (LST)	Daily Average ($\mu\text{g}/\text{m}^3$)	Max Hour ($\mu\text{g}/\text{m}^3$)	Notes
Fargo NW	380171004	10/21/2022	20.85	31	Canada Wildfire Smoke
Fond du Lac	270177417	10/21/2022	9.79	18	Canada Wildfire Smoke
Grand Portage	270317810	10/21/2022	3.92	16	Canada Wildfire Smoke
LACROSSE DOT	550630012	10/21/2022	27.2	48.8	Canada Wildfire Smoke
Lakeville – Near Road	270370480	10/21/2022	24.58	31.6	Canada Wildfire Smoke
Leech Lake Nation	270213410	10/21/2022	13.5	27	Canada Wildfire Smoke
Marshall	270834210	10/21/2022	18.79	26	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	10/21/2022	28.81	52.6	Canada Wildfire Smoke
Minneapolis-Phillips	270530963	10/21/2022	29.78	53.4	Canada Wildfire Smoke
Red Lake Nation	270072304	10/21/2022	10.92	29	Canada Wildfire Smoke
Rochester	271095008	10/21/2022	30.45	44.3	Canada Wildfire Smoke
Shakopee	271390505	10/21/2022	29.62	57.5	Canada Wildfire Smoke
St. Cloud	271453052	10/21/2022	23.68	27.7	Canada Wildfire Smoke
St. Michael	271713201	10/21/2022	29.92	51.1	Canada Wildfire Smoke
St. Paul-Harding	271230871	10/21/2022	22.88	54	Canada Wildfire Smoke
Virginia	271377001	10/21/2022	11.46	21	Canada Wildfire Smoke
West Duluth	271377554	10/21/2022	9.83	21	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on October 21, 2022.



MODIS visible satellite for October 21, 2022.



Backward trajectories for October 21, 2022.

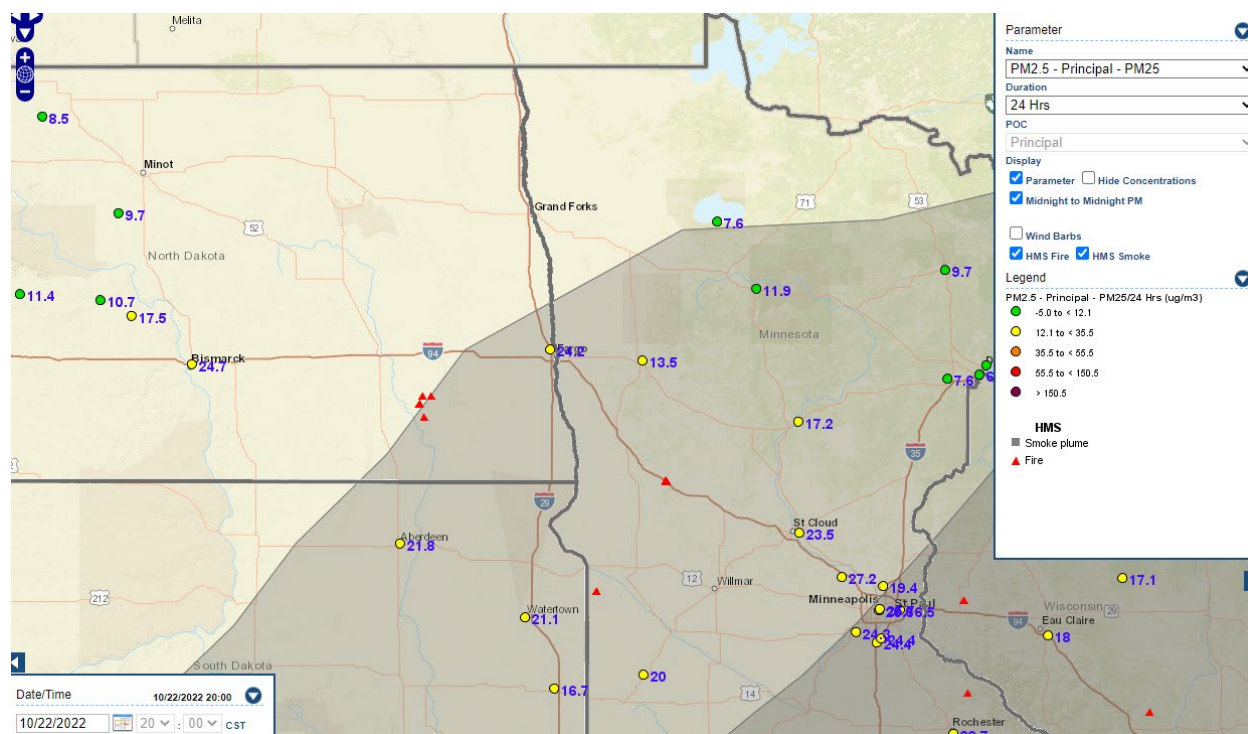
10/22/2022 Impacts

Smoke impacts from wildfires in western Canada. Agricultural and prescribed burning in North Dakota and southern Canada may have also contributed smoke.

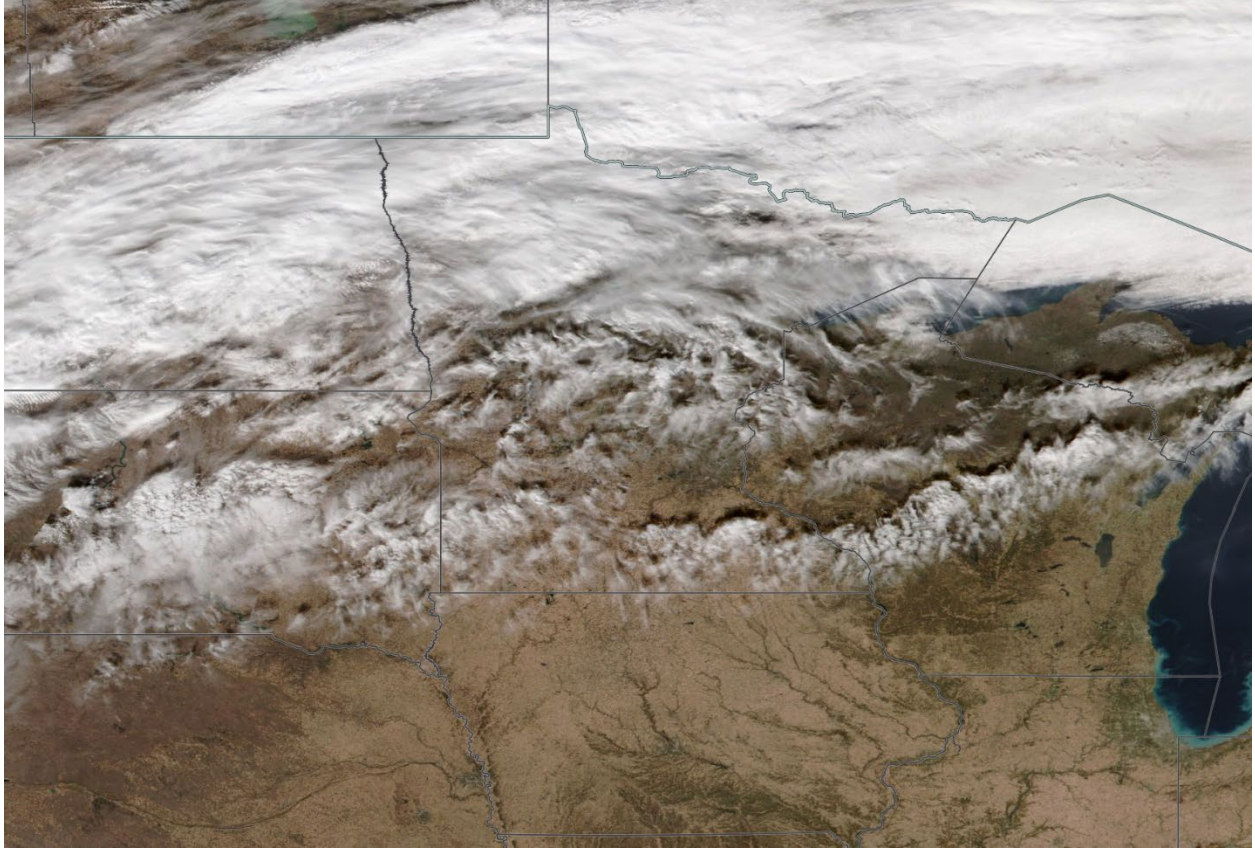
Monitored 24-hour PM_{2.5} concentrations impacted by smoke on October 22, 2022.

Site	Site AQS	Date (LST)	Daily Average (µg/m ³)	Max Hour (µg/m ³)	Notes
Apple Valley	270370470	10/22/2022	24.41	32.3	Canada Wildfire Smoke
Blaine	270031002	10/22/2022	19.46	35	Canada Wildfire Smoke
Brainerd	270353204	10/22/2022	17.25	21.8	Canada Wildfire Smoke
Detroit Lakes	270052013	10/22/2022	13.5	19	Canada Wildfire Smoke
Fargo NW	380171004	10/22/2022	24.2	31.8	Canada Wildfire Smoke
LACROSSE DOT	550630012	10/22/2022	19.17	33.7	Canada Wildfire Smoke

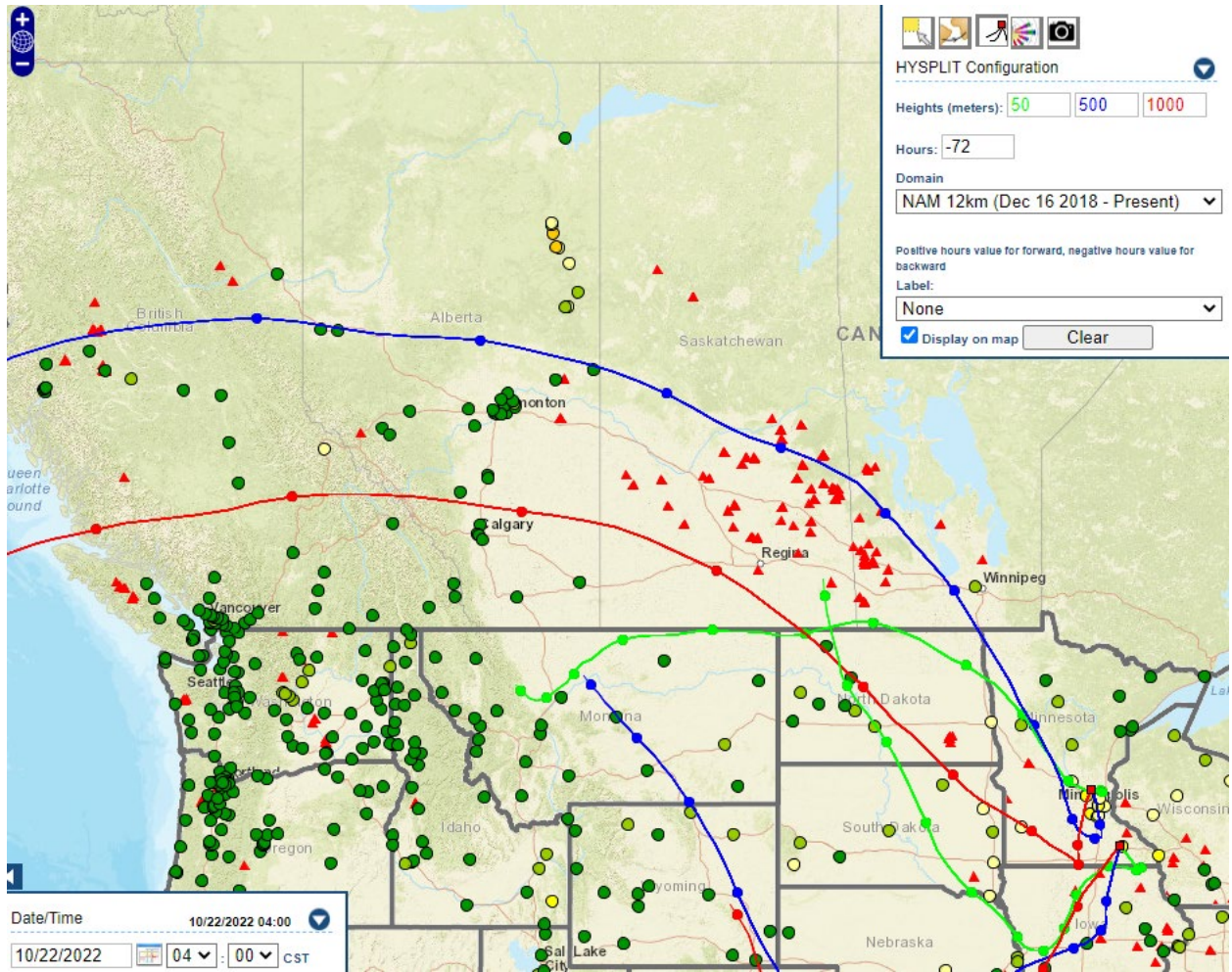
Site	Site AQS	Date (LST)	Daily Average (µg/m³)	Max Hour (µg/m³)	Notes
Lakeville – Near Road	270370480	10/22/2022	24.4	36.9	Canada Wildfire Smoke
Leech Lake Nation	270213410	10/22/2022	11.96	18	Canada Wildfire Smoke
Marshall	270834210	10/22/2022	20.04	32	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	10/22/2022	25.79	44.8	Canada Wildfire Smoke
Minneapolis-Phillips	270530963	10/22/2022	26.61	43.1	Canada Wildfire Smoke
Rochester	271095008	10/22/2022	22.75	39	Canada Wildfire Smoke
Shakopee	271390505	10/22/2022	24.34	37.5	Canada Wildfire Smoke
St. Cloud	271453052	10/22/2022	23.56	40.1	Canada Wildfire Smoke
St. Michael	271713201	10/22/2022	27.29	46.3	Canada Wildfire Smoke
St. Paul-Harding	271230871	10/22/2022	16.5	35	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on October 22, 2022.



MODIS visible satellite for October 22, 2022.



Backward trajectories for October 22, 2022.

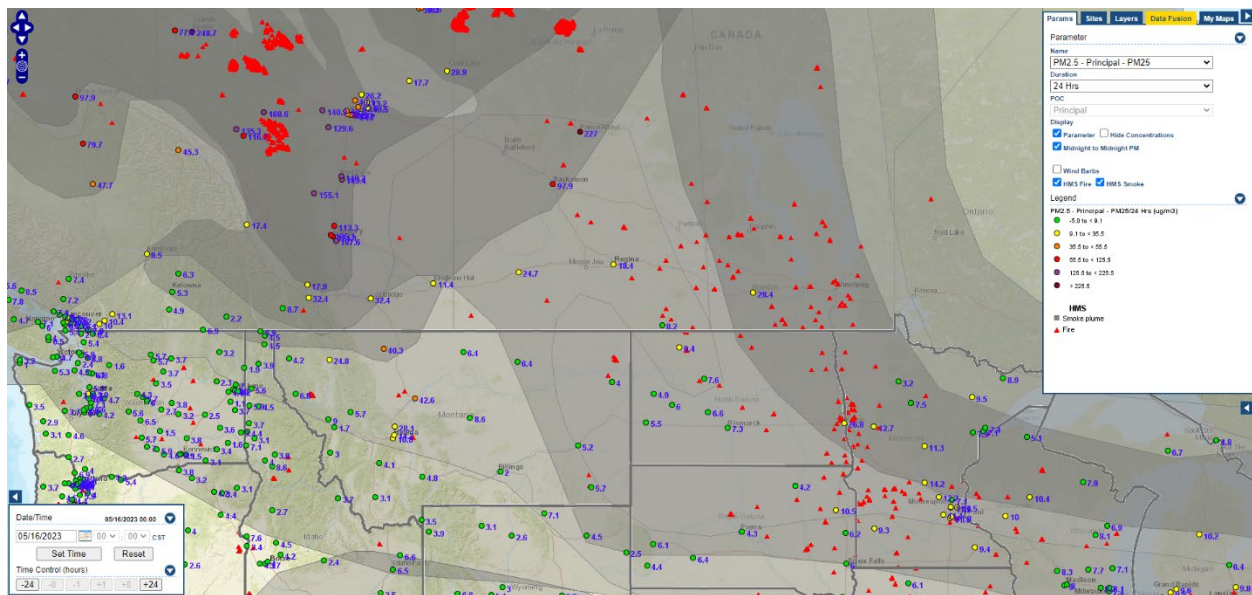
Appendix B – Daily fire impacts for 2023

5/16/2023 Impacts

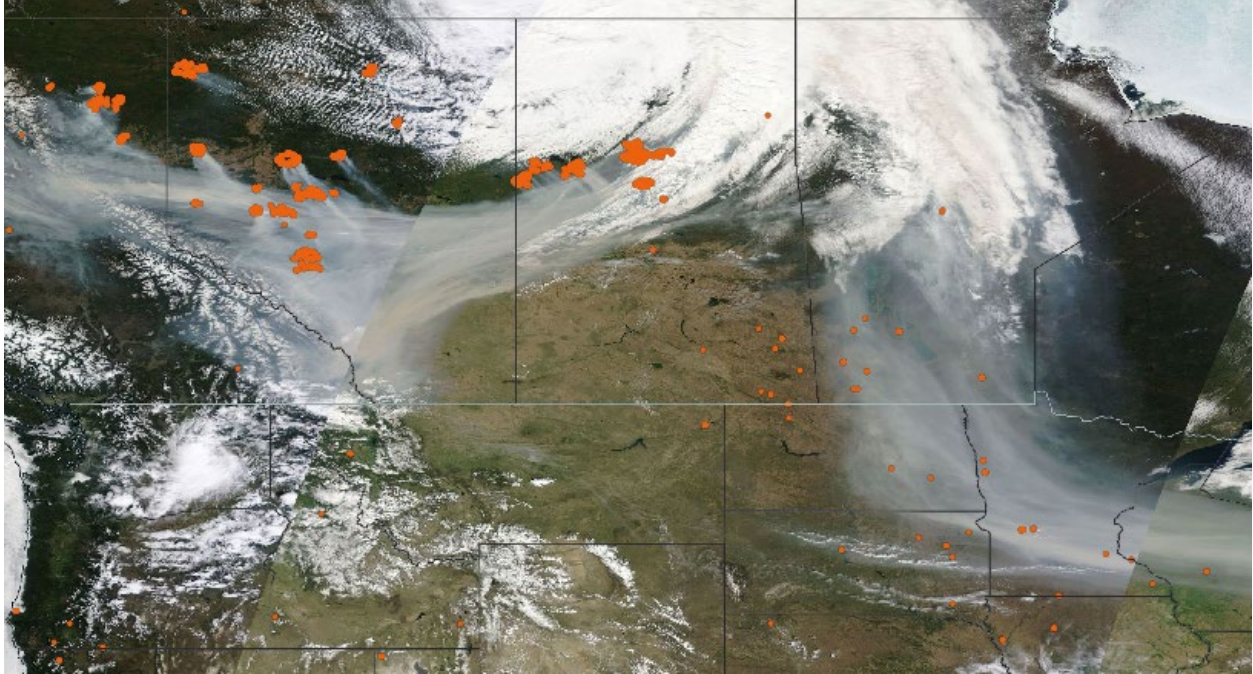
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on May 16, 2023.

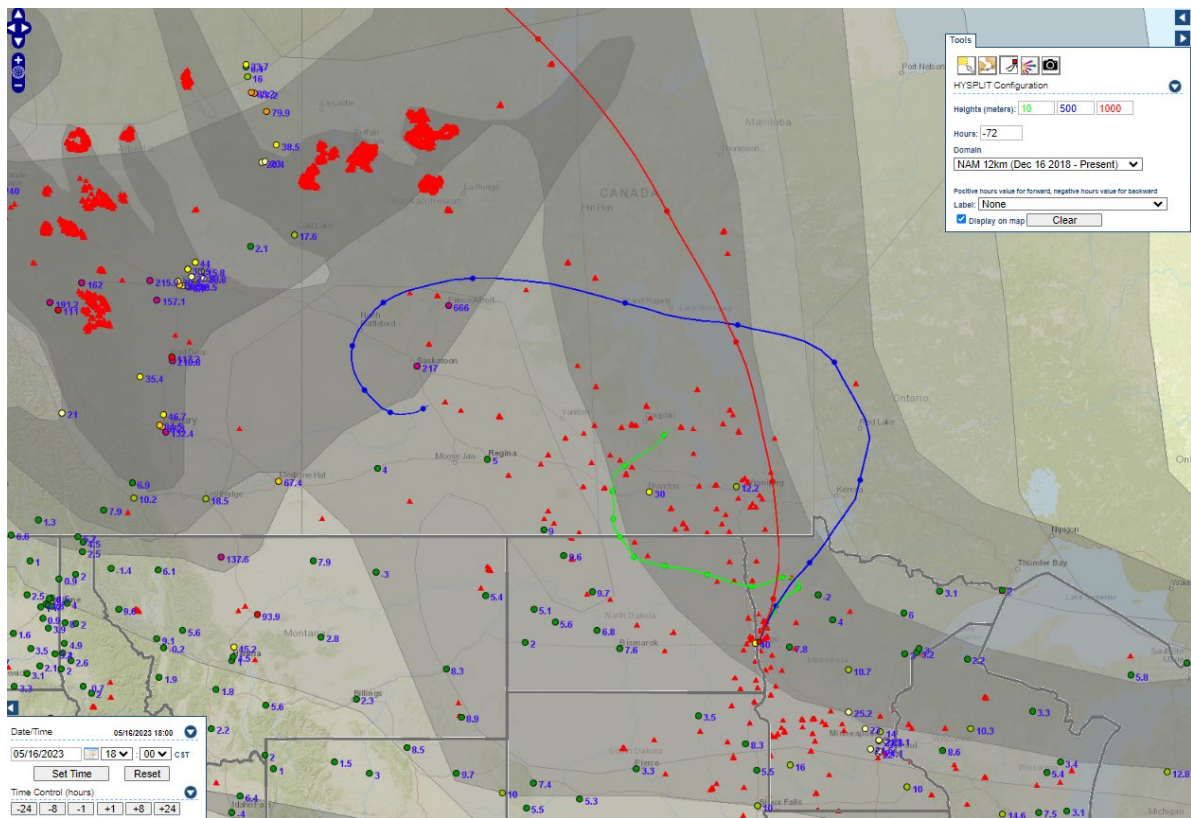
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Fargo NW	380171004	5/16/2023	26.8	49.3	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on May 16, 2023.



MODIS visible satellite for May 16, 2023.



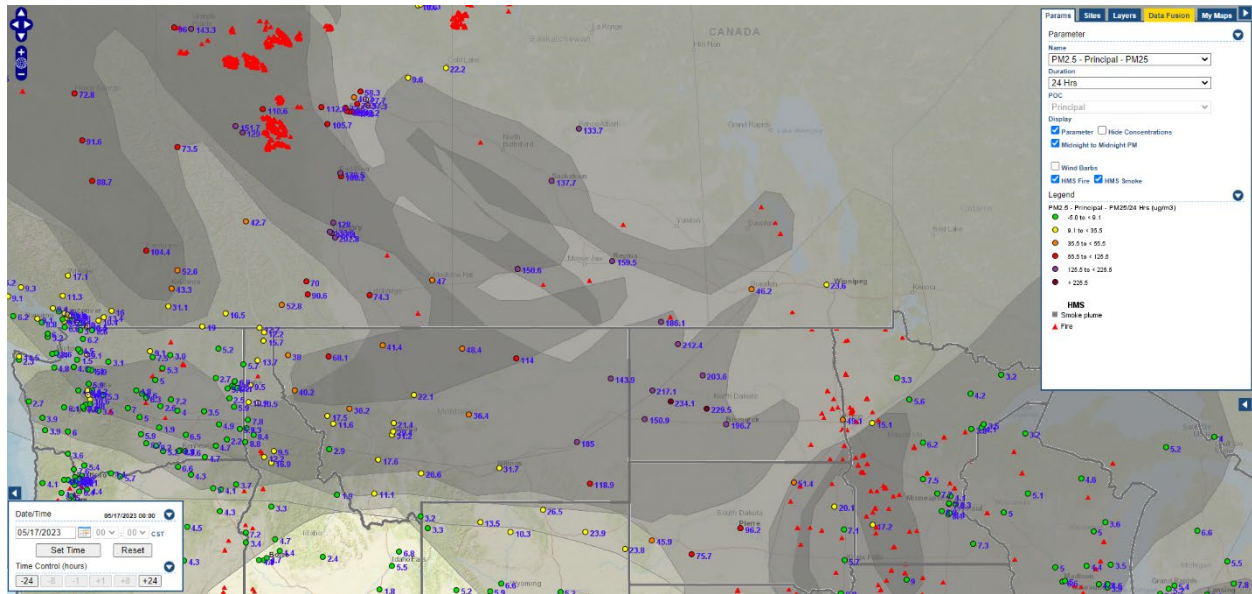
Backward trajectories for May 16, 2023.

5/17/2023 Impacts

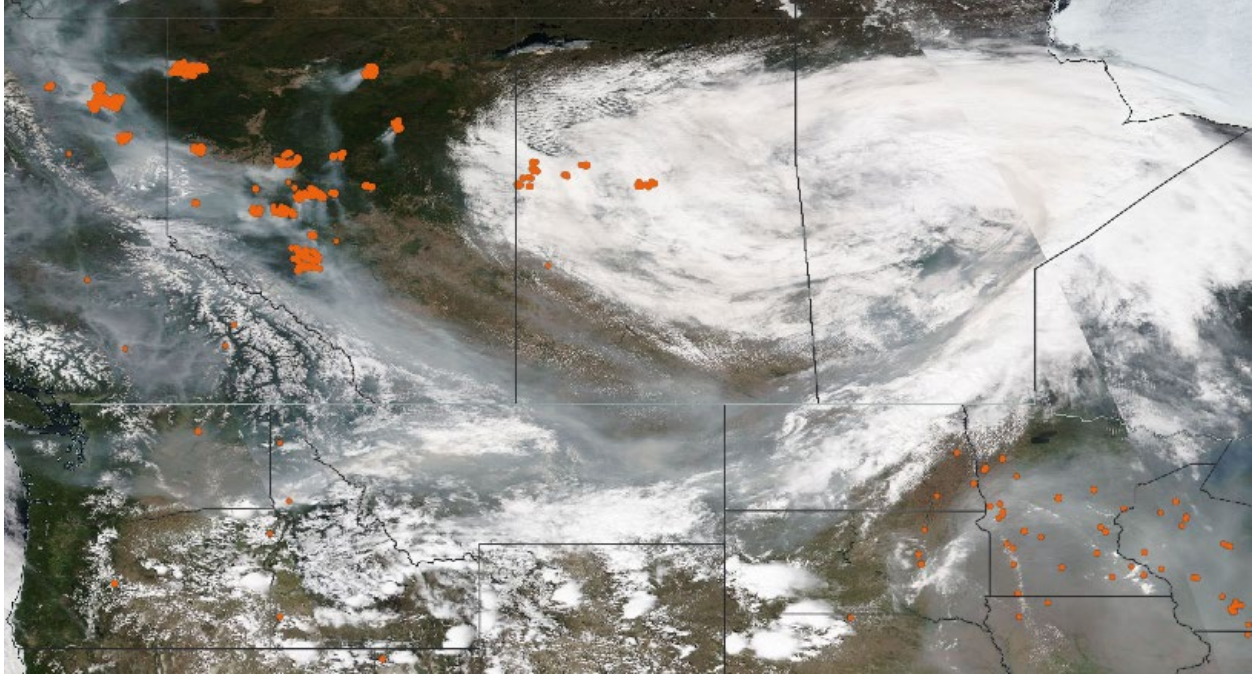
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on May 17, 2023.

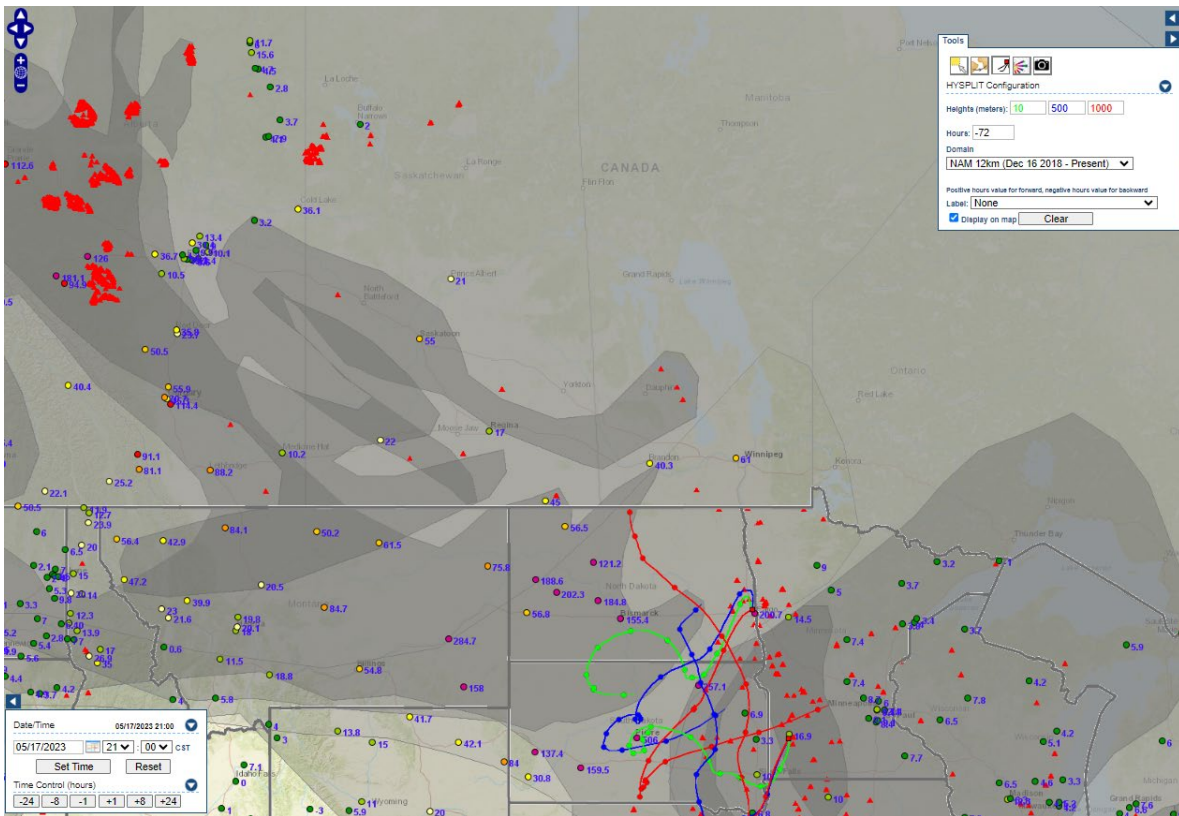
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Fargo NW	380171004	5/17/2023	49.2	226.9	Canada Wildfire Smoke
Marshall	270834210	5/17/2023	17.2	26.3	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on May 17, 2023.



MODIS visible satellite for May 17, 2023.



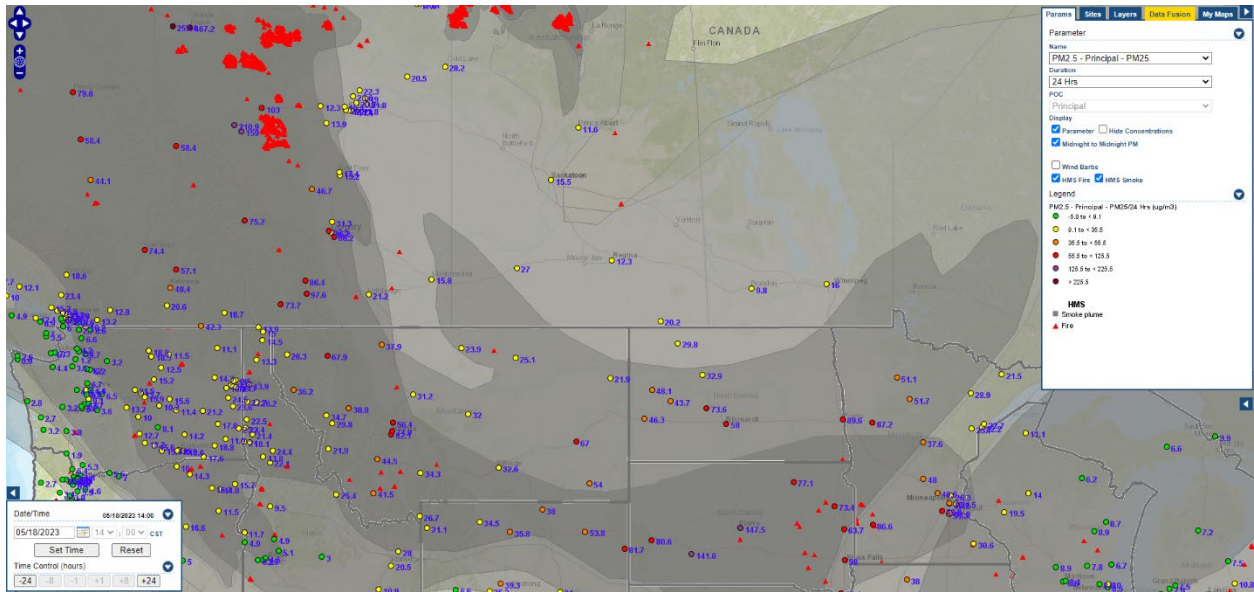
Backward trajectories for May 17, 2023.

5/18/2023 Impacts

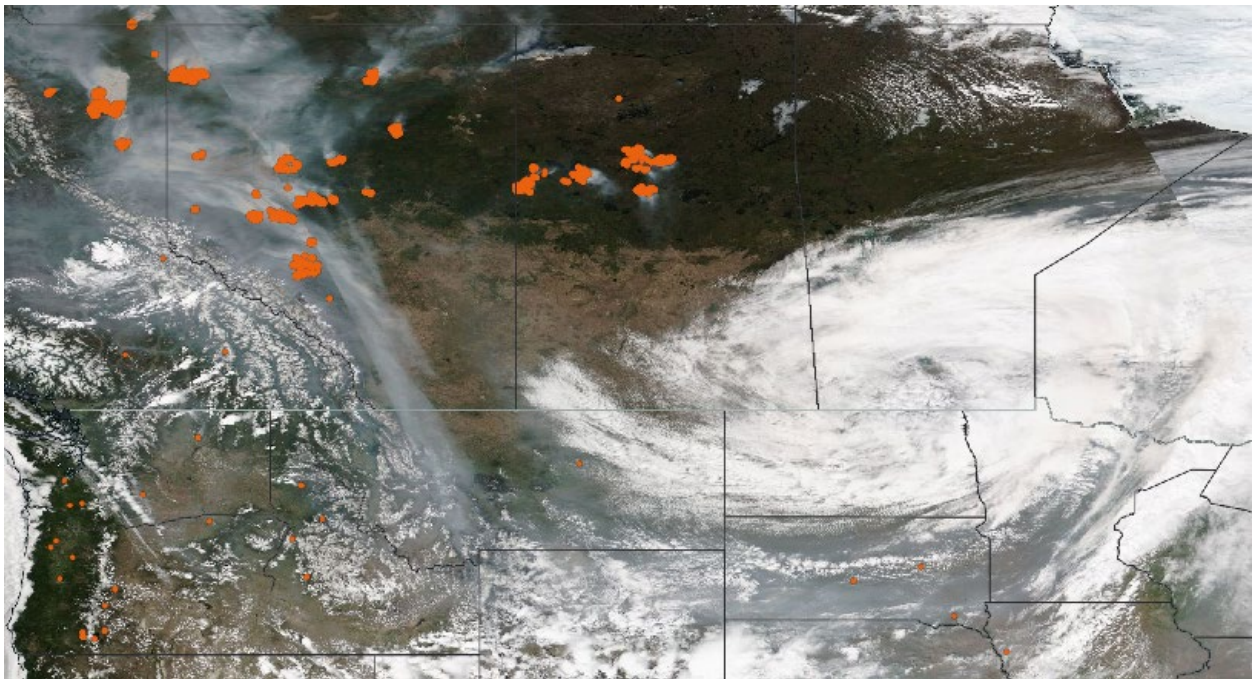
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on May 18, 2023.

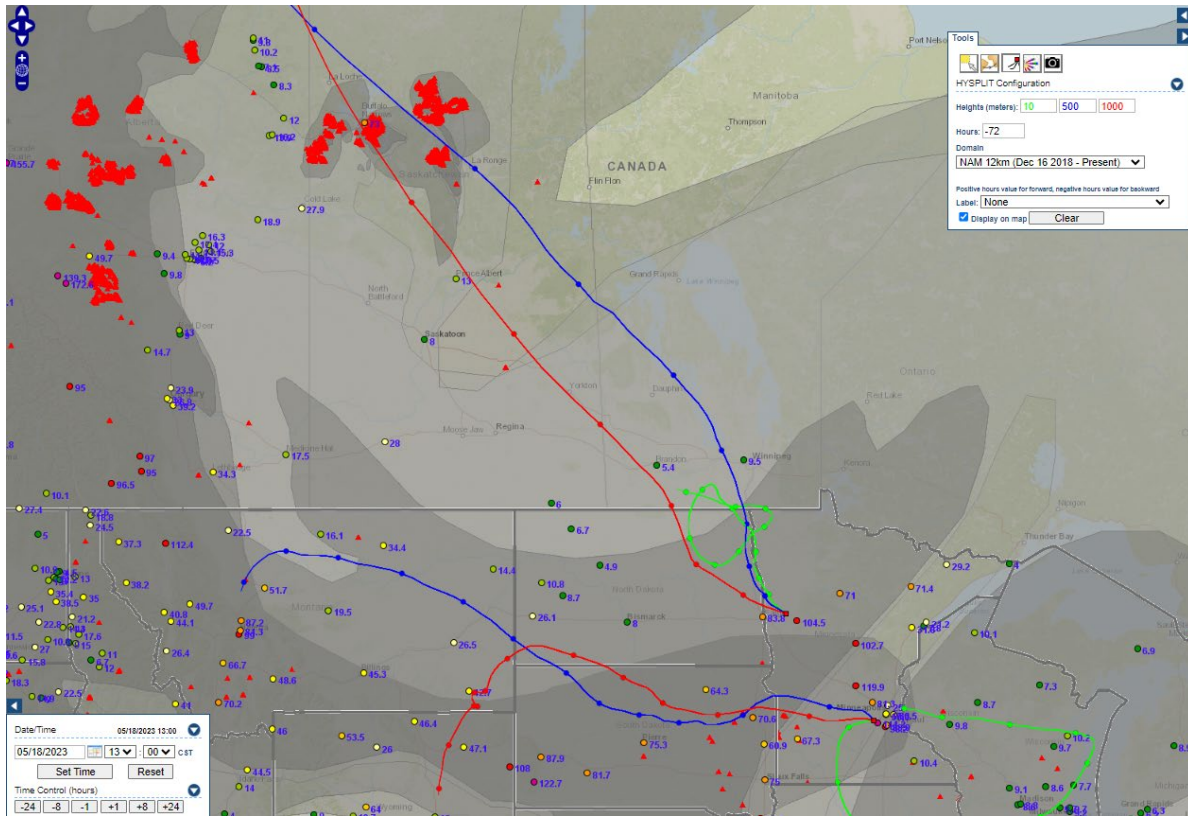
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	5/18/2023	51.9	115.3	Canada Wildfire Smoke
Blaine	270031002	5/18/2023	26.4	79	Canada Wildfire Smoke
Brainerd	270353204	5/18/2023	37.7	103.5	Canada Wildfire Smoke
Detroit Lakes	270052013	5/18/2023	87.2	187.9	Canada Wildfire Smoke
Duluth-WDSE	271377550	5/18/2023	22.8	100.1	Canada Wildfire Smoke
Ely	270750005	5/18/2023	21.5	63	Canada Wildfire Smoke
Fargo NW	380171004	5/18/2023	89.6	219.3	Canada Wildfire Smoke
Fond du Lac	270177417	5/18/2023	25.7	86.8	Canada Wildfire Smoke
Lakeville - Near Road	270370480	5/18/2023	51.4	120.8	Canada Wildfire Smoke
Leech Lake Nation	270213410	5/18/2023	51.8	120	Canada Wildfire Smoke
Marshall	270834210	5/18/2023	86.7	198.9	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	5/18/2023	40.2	111.9	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	5/18/2023	39.5	108.9	Canada Wildfire Smoke
Red Lake Nation	270072304	5/18/2023	51.2	117	Canada Wildfire Smoke
Rochester	271095008	5/18/2023	30.7	80.5	Canada Wildfire Smoke
Shakopee	271390505	5/18/2023	59.9	144.2	Canada Wildfire Smoke
St. Cloud	271453052	5/18/2023	48.1	128.3	Canada Wildfire Smoke
St. Michael	271713201	5/18/2023	40.6	103.7	Canada Wildfire Smoke
St. Paul-Harding	271230871	5/18/2023	34.5	87.7	Canada Wildfire Smoke
Virginia	271377001	5/18/2023	29.0	95.1	Canada Wildfire Smoke
West Duluth	271377554	5/18/2023	22.3	92.4	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on May 18, 2023.



MODIS visible satellite for May 18, 2023.



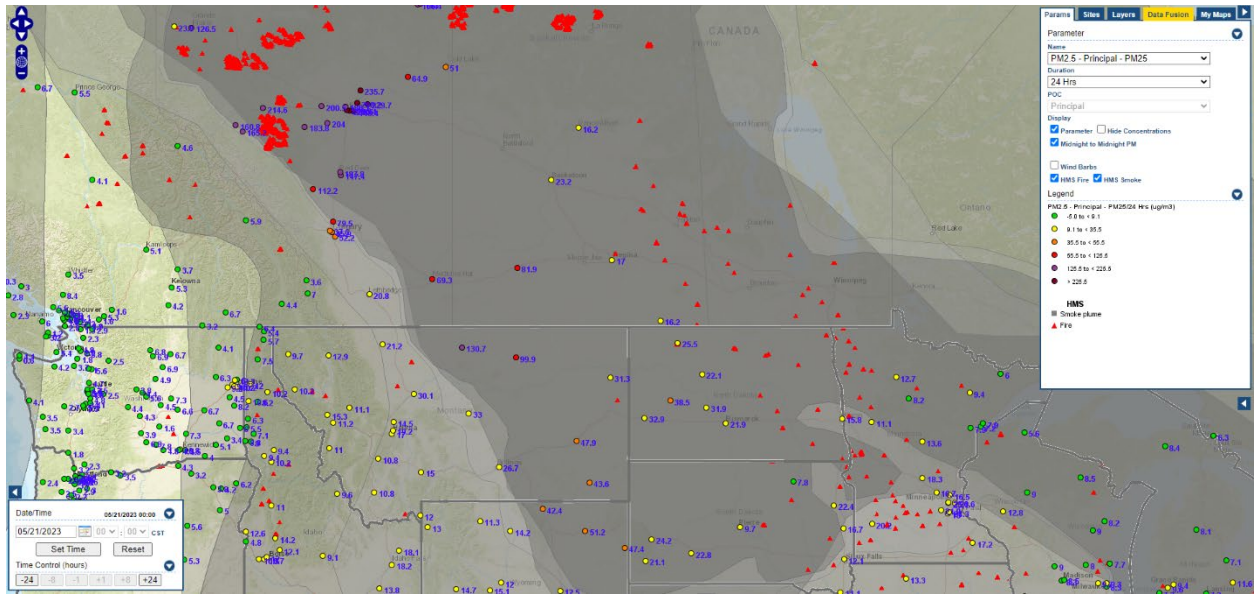
Backward trajectories for May 18, 2023.

5/21/2023 Impacts

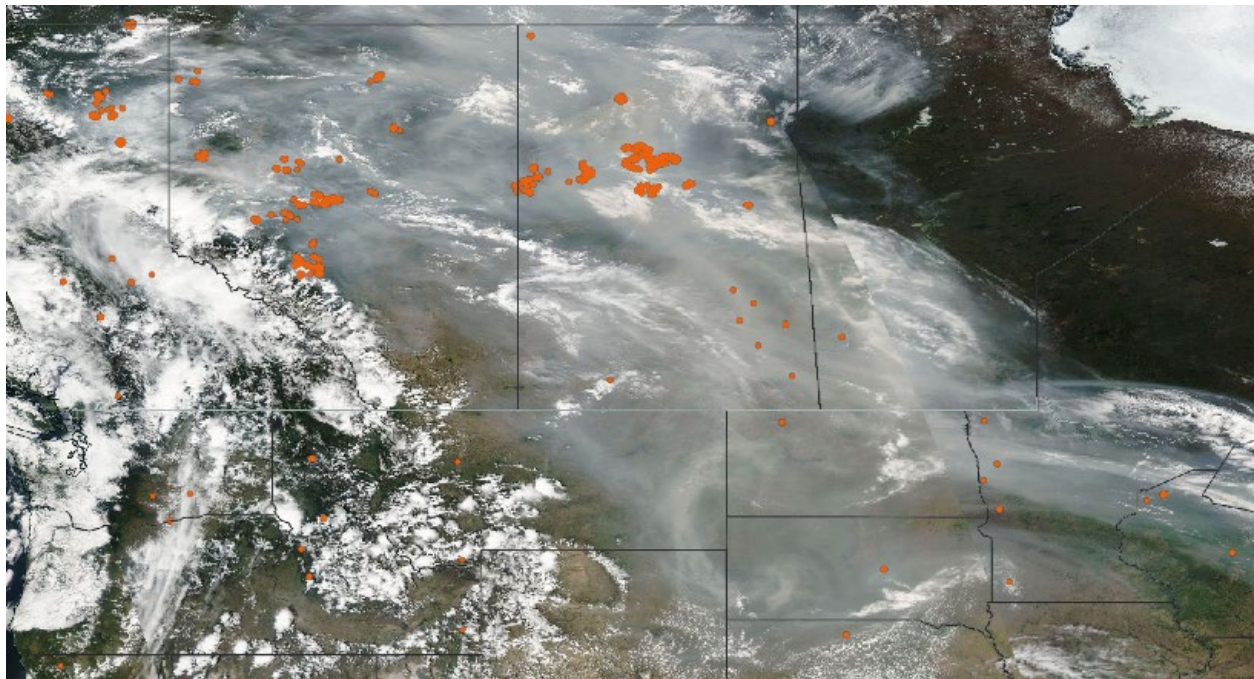
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on May 21, 2023.

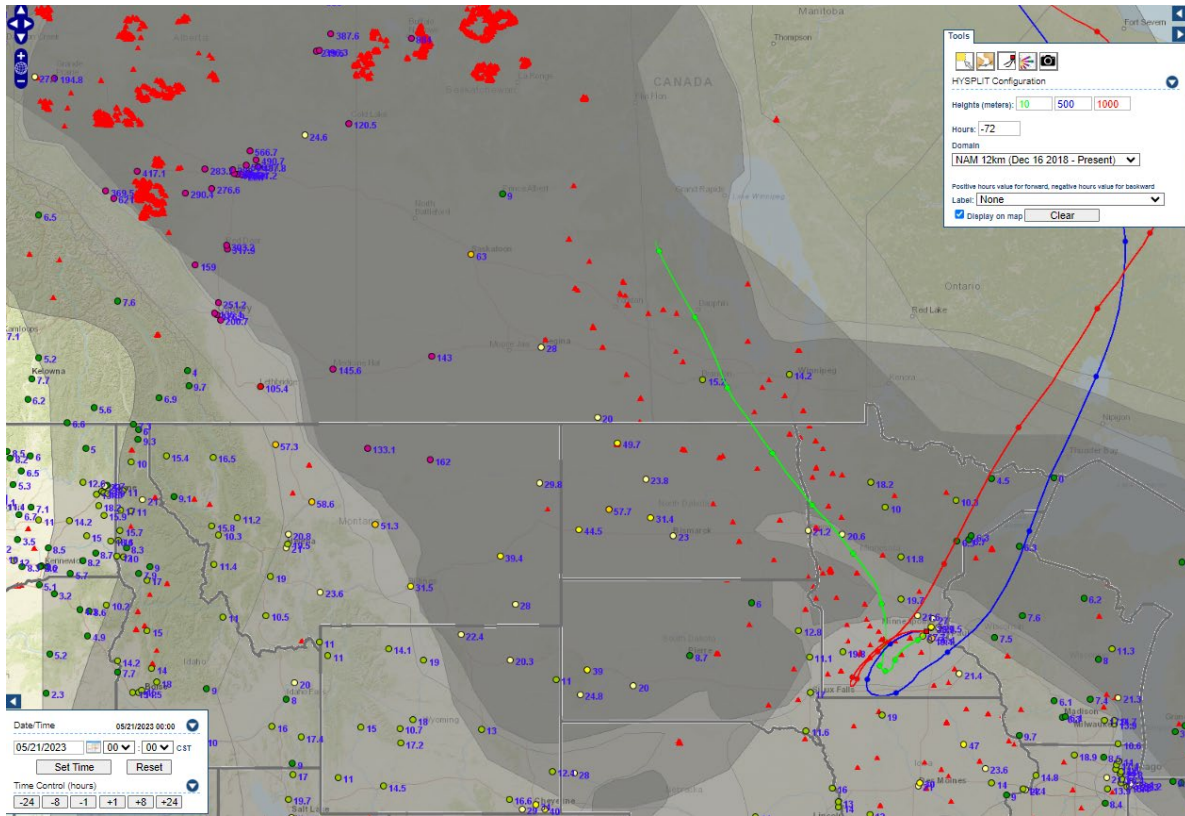
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	5/21/2023	24.4	56.4	Canada Wildfire Smoke
Marshall	270834210	5/21/2023	20.2	24.2	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	5/21/2023	25.2	39.1	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	5/21/2023	23.3	41.5	Canada Wildfire Smoke
Shakopee	271390505	5/21/2023	21.9	67.7	Canada Wildfire Smoke
St. Paul-Harding	271230871	5/21/2023	20.6	32.4	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on May 21, 2023.



MODIS visible satellite for May 21, 2023.



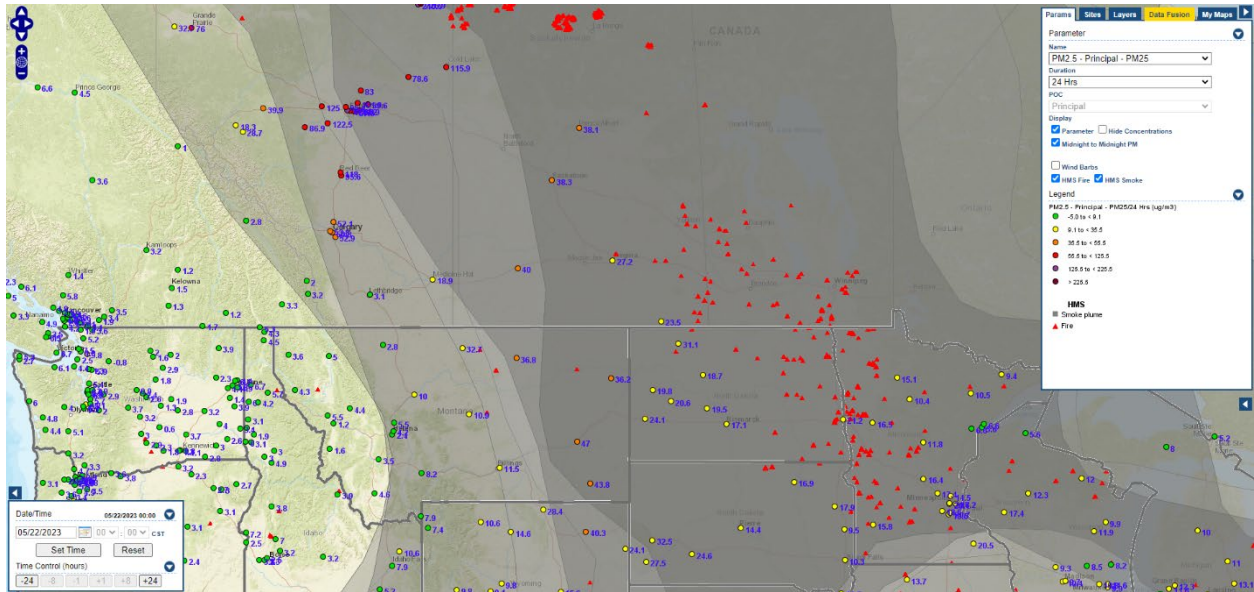
Backward trajectories for May 21, 2023.

5/22/2023 Impacts

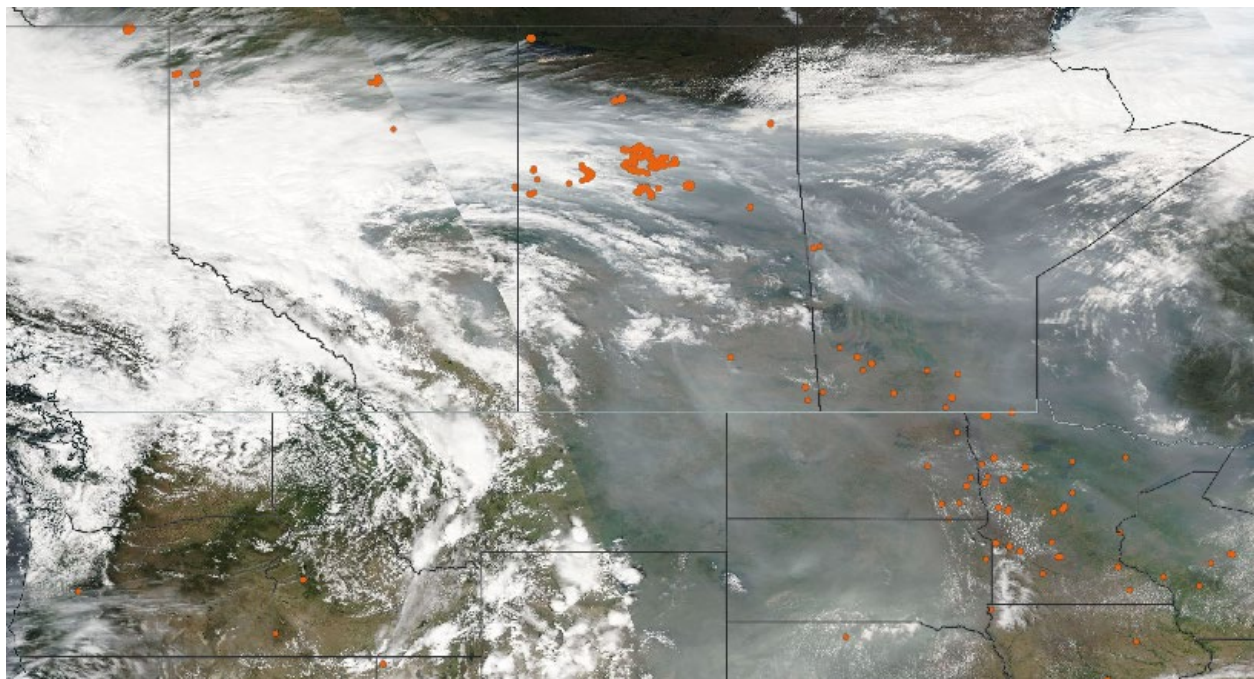
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on May 22, 2023.

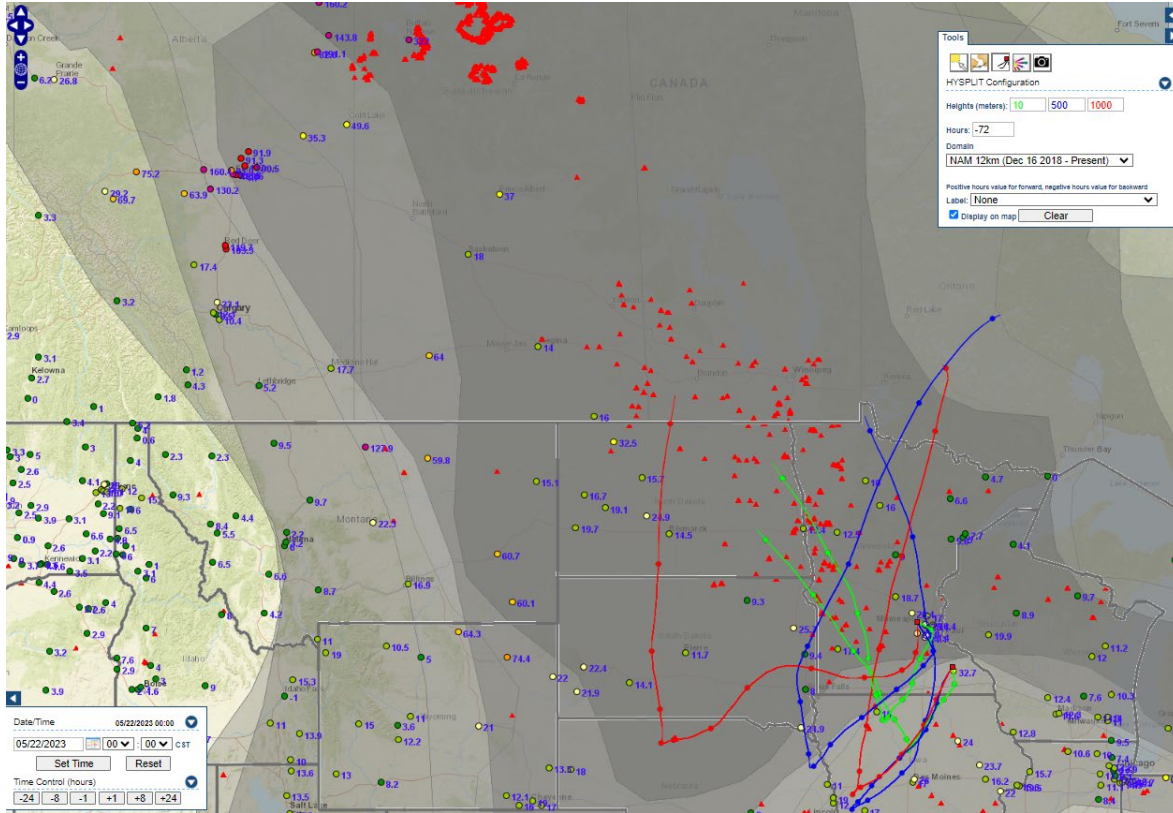
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	5/22/2023	20.8	28.5	Canada Wildfire Smoke
Fargo NW	380171004	5/22/2023	21.3	26.7	Canada Wildfire Smoke
Lakeville - Near Road	270370480	5/22/2023	19.5	46.5	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	5/22/2023	20.2	28.4	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	5/22/2023	21.7	37	Canada Wildfire Smoke
Rochester	271095008	5/22/2023	20.6	32.7	Canada Wildfire Smoke
Shakopee	271390505	5/22/2023	18.7	25	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on May 22, 2023.



MODIS visible satellite for May 22, 2023.



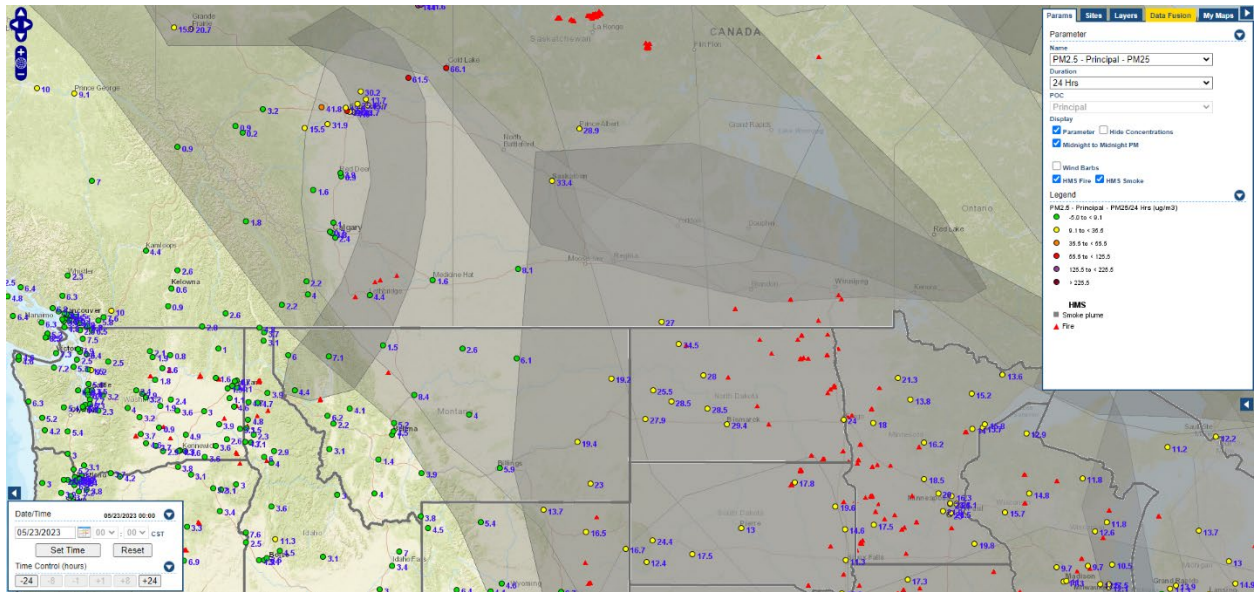
Backward trajectories for May 22, 2023.

5/23/2023 Impacts

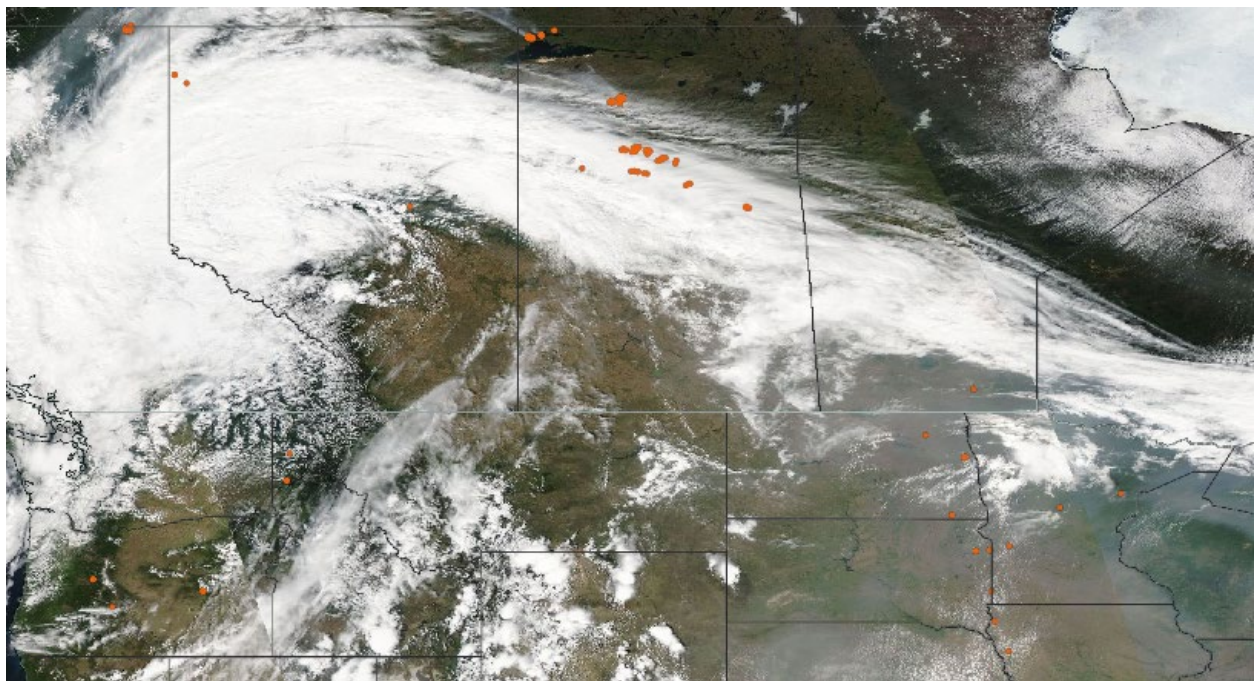
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on May 23, 2023.

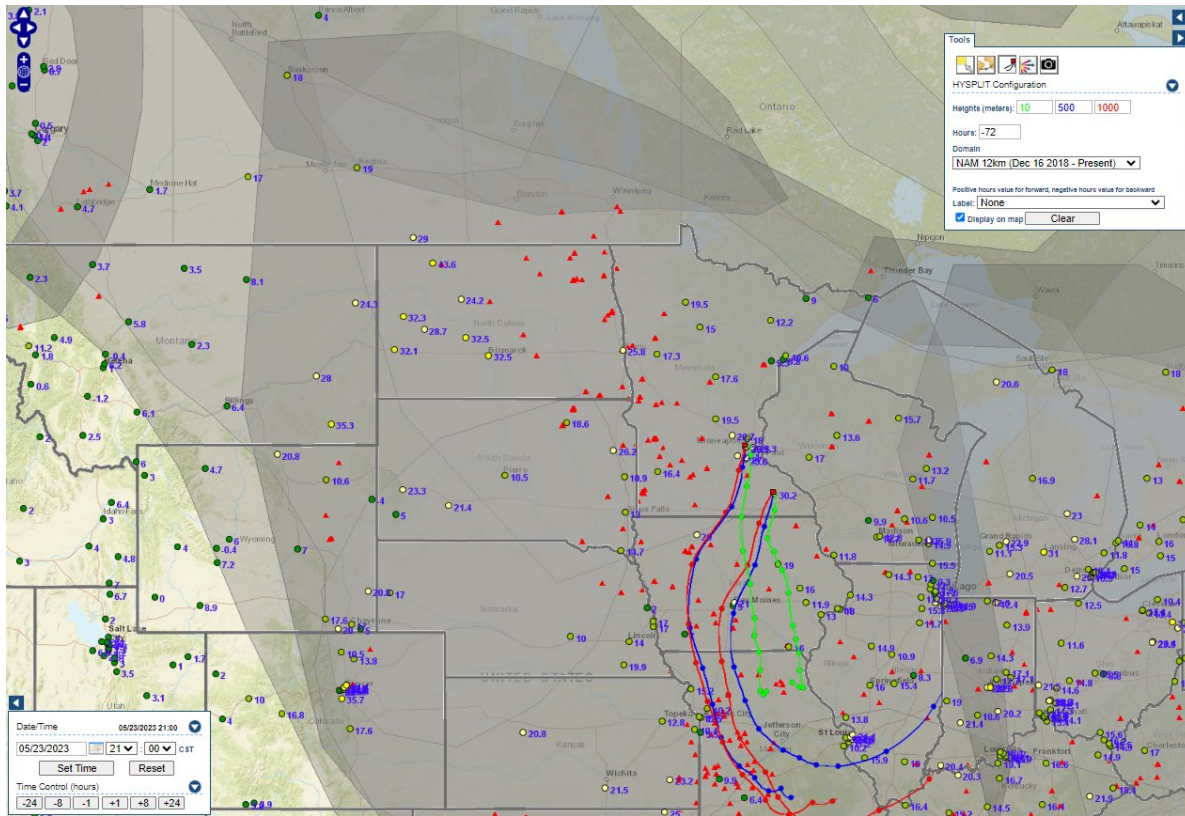
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	5/23/2023	24.6	29.5	Canada Wildfire Smoke
Fargo NW	380171004	5/23/2023	24.1	37	Canada Wildfire Smoke
Lakeville - Near Road	270370480	5/23/2023	23.1	42.4	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	5/23/2023	24.5	36.5	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	5/23/2023	23.5	29.9	Canada Wildfire Smoke
Red Lake Nation	270072304	5/23/2023	21.3	26.8	Canada Wildfire Smoke
Rochester	271095008	5/23/2023	19.8	30.2	Canada Wildfire Smoke
Shakopee	271390505	5/23/2023	21.9	27.6	Canada Wildfire Smoke
St. Michael	271713201	5/23/2023	20.0	22.9	Canada Wildfire Smoke
St. Paul-Harding	271230871	5/23/2023	24.2	34.7	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on May 23, 2023.



MODIS visible satellite for May 23, 2023.



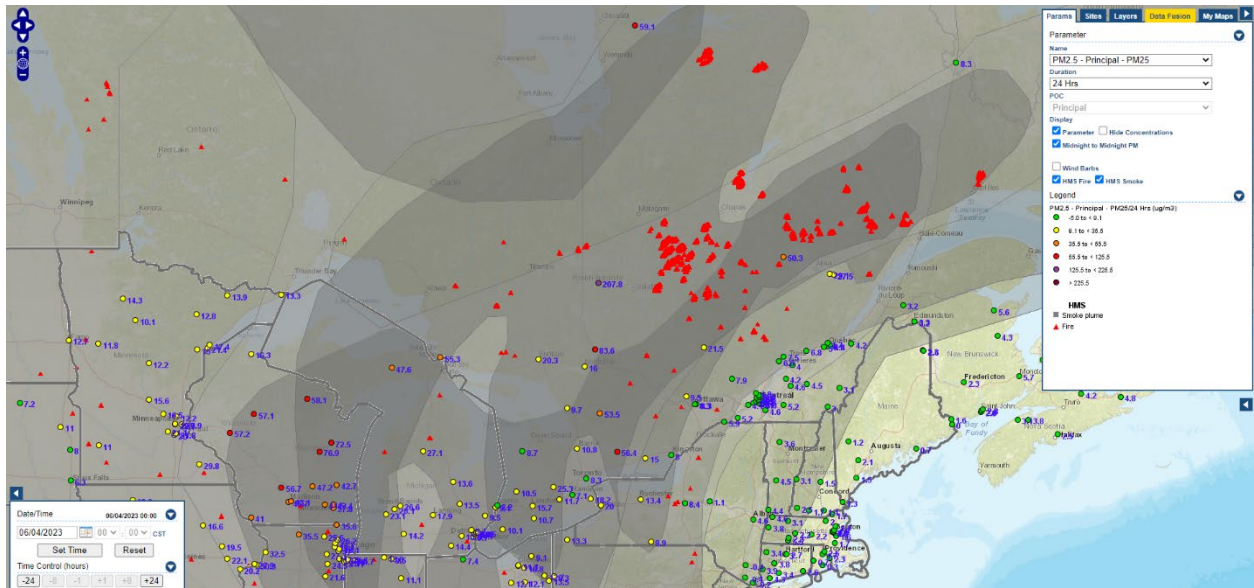
Backward trajectories for May 23, 2023.

6/4/2023 Impacts

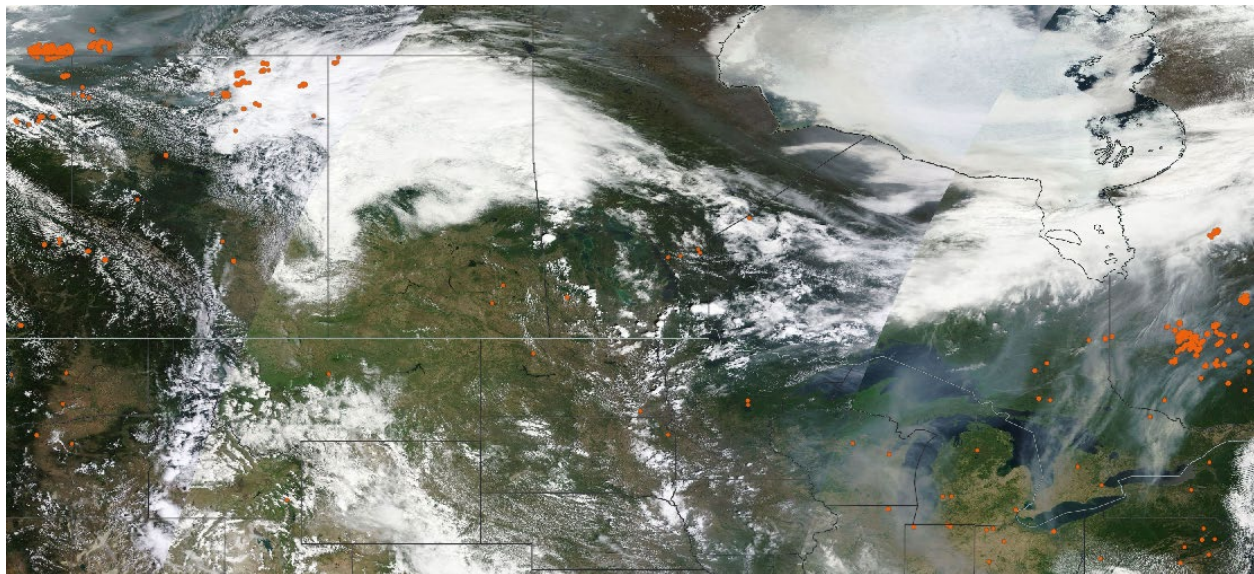
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 4, 2023.

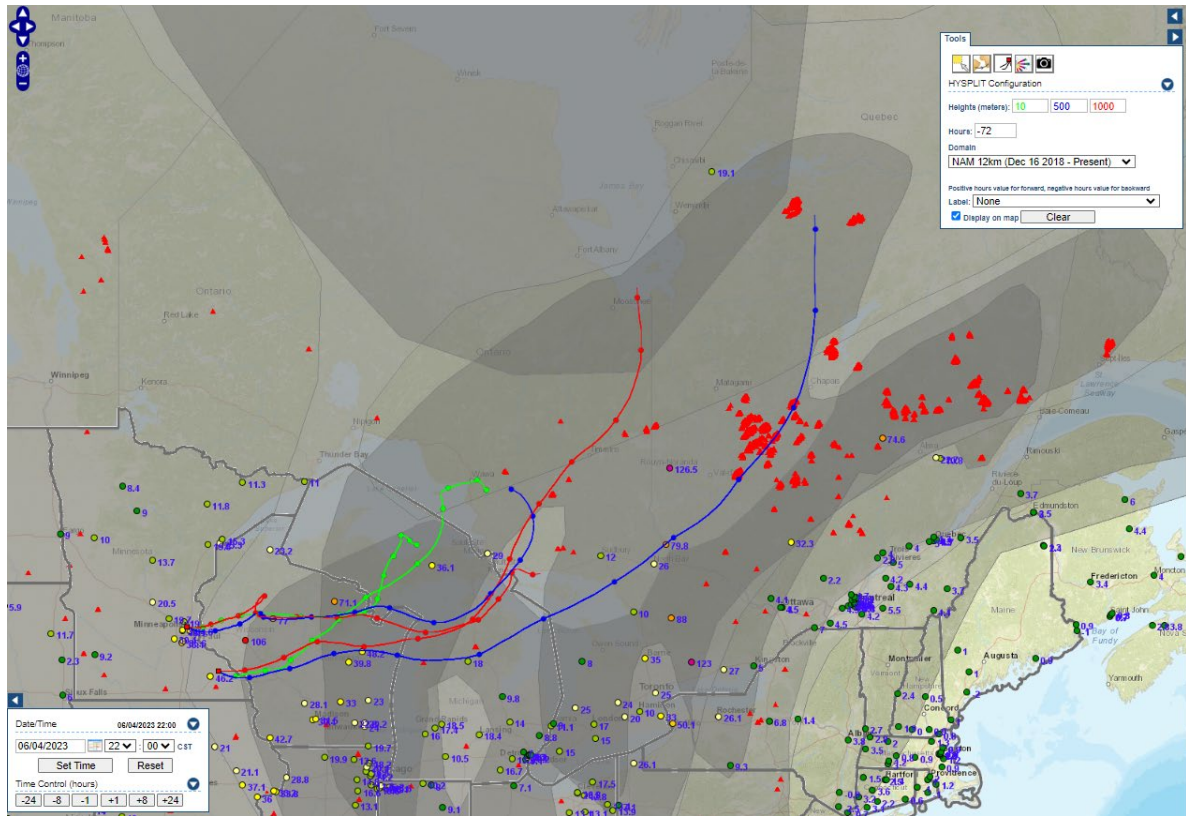
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	6/4/2023	21.8	37	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/4/2023	20.1	38.3	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/4/2023	22.4	46.3	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/4/2023	19.8	36.7	Canada Wildfire Smoke
Rochester	271095008	6/4/2023	29.8	46.2	Canada Wildfire Smoke
Shakopee	271390505	6/4/2023	21.2	35.2	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/4/2023	21.0	41.8	Canada Wildfire Smoke
West Duluth	271377554	6/4/2023	21.5	26	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 4, 2023.



MODIS visible satellite for June 4, 2023.



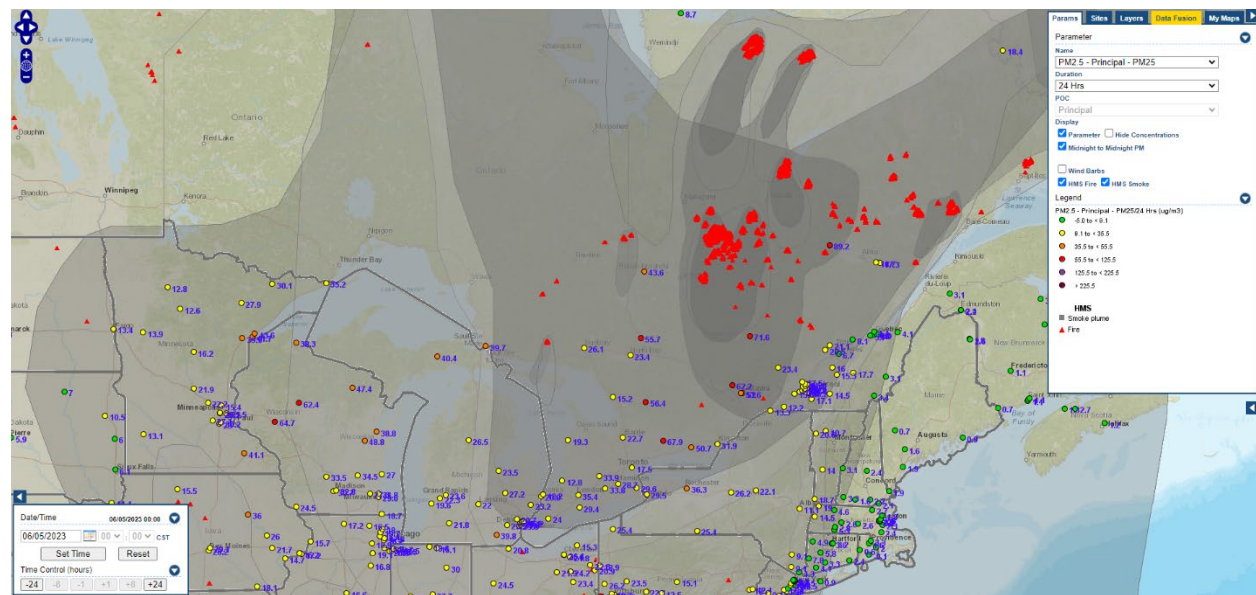
Backward trajectories for June 4, 2023.

6/5/2023 Impacts

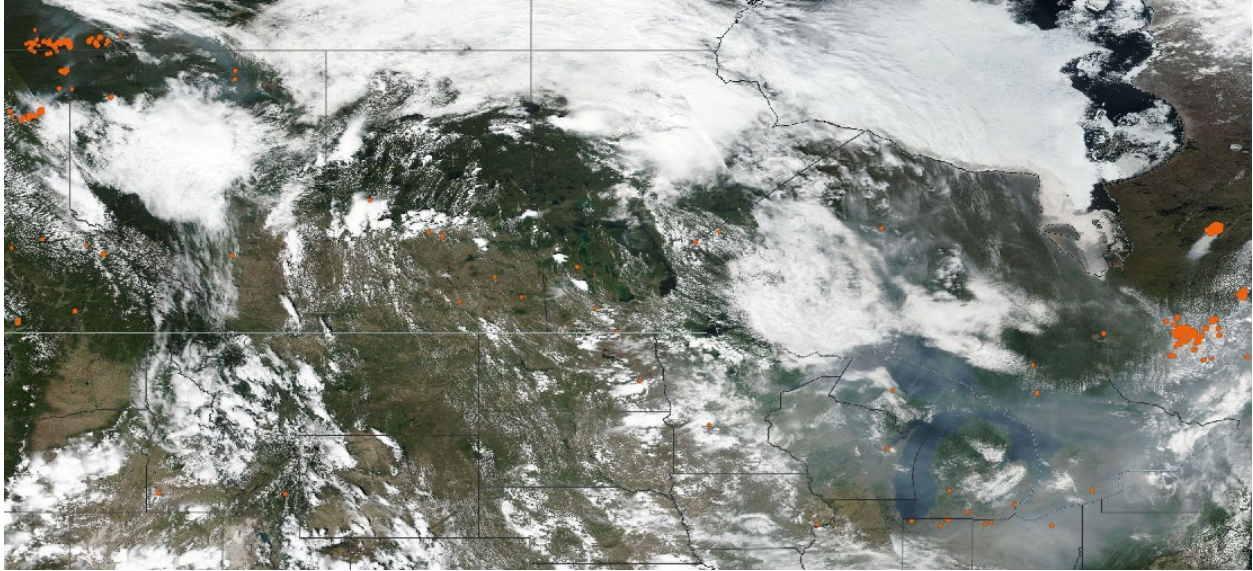
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 5, 2023.

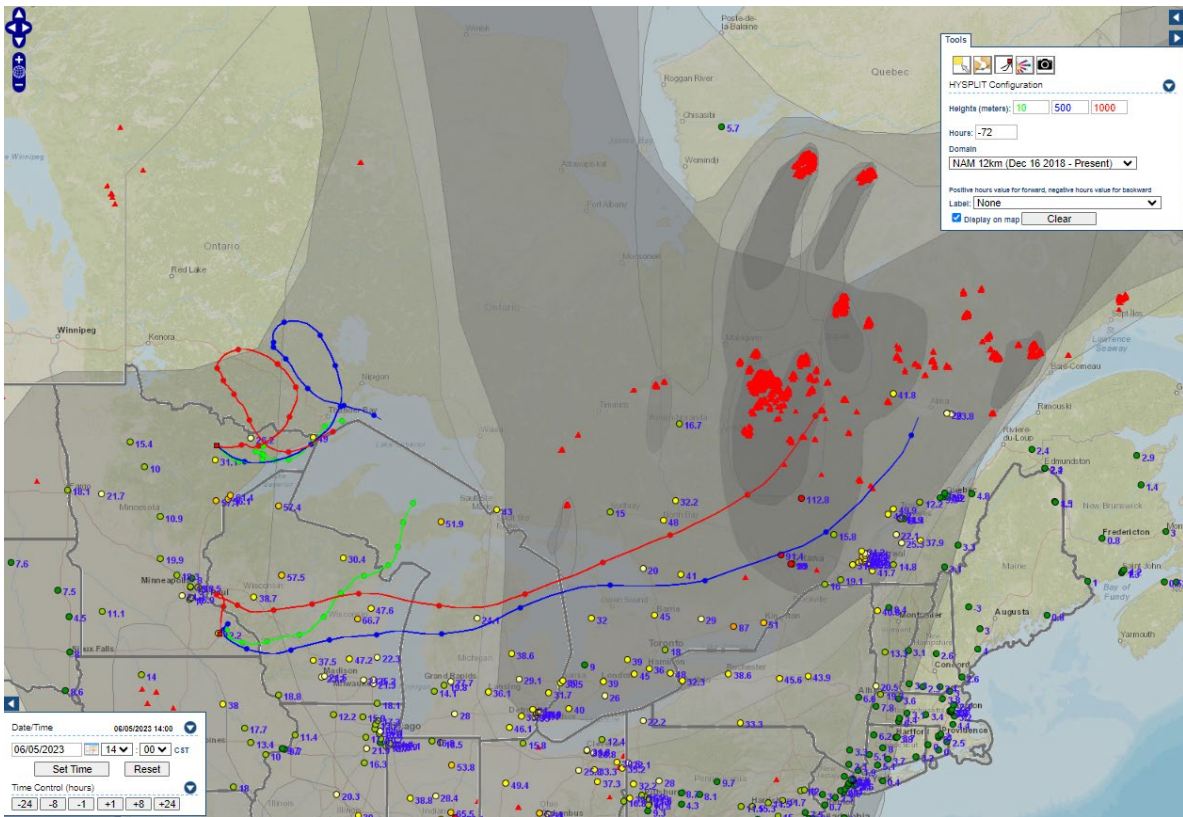
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	6/5/2023	30.3	45.1	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/5/2023	43.6	67.8	Canada Wildfire Smoke
Ely	270750005	6/5/2023	30.2	51.7	Canada Wildfire Smoke
Fond du Lac	270177417	6/5/2023	39.9	60.6	Canada Wildfire Smoke
Grand Portage	270317810	6/5/2023	35.3	52	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/5/2023	29.1	42.5	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/5/2023	28.2	46.3	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/5/2023	27.1	45	Canada Wildfire Smoke
Rochester	271095008	6/5/2023	41.1	70.4	Canada Wildfire Smoke
Shakopee	271390505	6/5/2023	27.5	42	Canada Wildfire Smoke
St. Cloud	271453052	6/5/2023	21.9	38.8	Canada Wildfire Smoke
St. Michael	271713201	6/5/2023	22.2	33.2	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/5/2023	25.5	39.5	Canada Wildfire Smoke
Virginia	271377001	6/5/2023	28.0	55.3	Canada Wildfire Smoke
West Duluth	271377554	6/5/2023	41.7	63.2	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 5, 2023.



MODIS visible satellite for June 5, 2023.



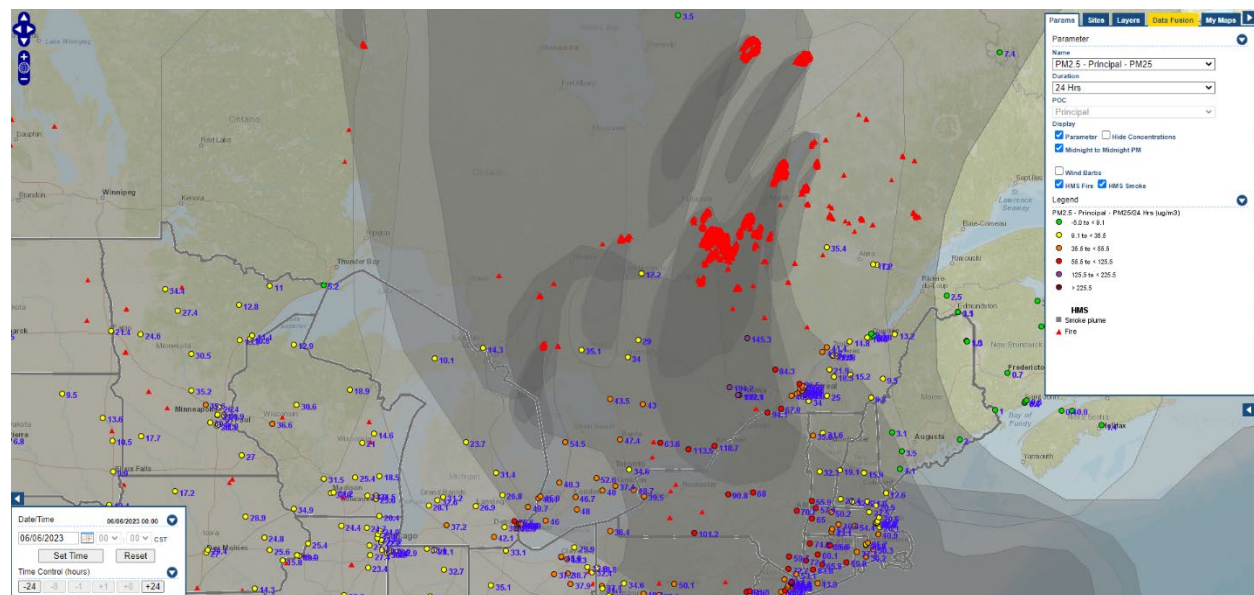
Backward trajectories for June 5, 2023.

6/6/2023 Impacts

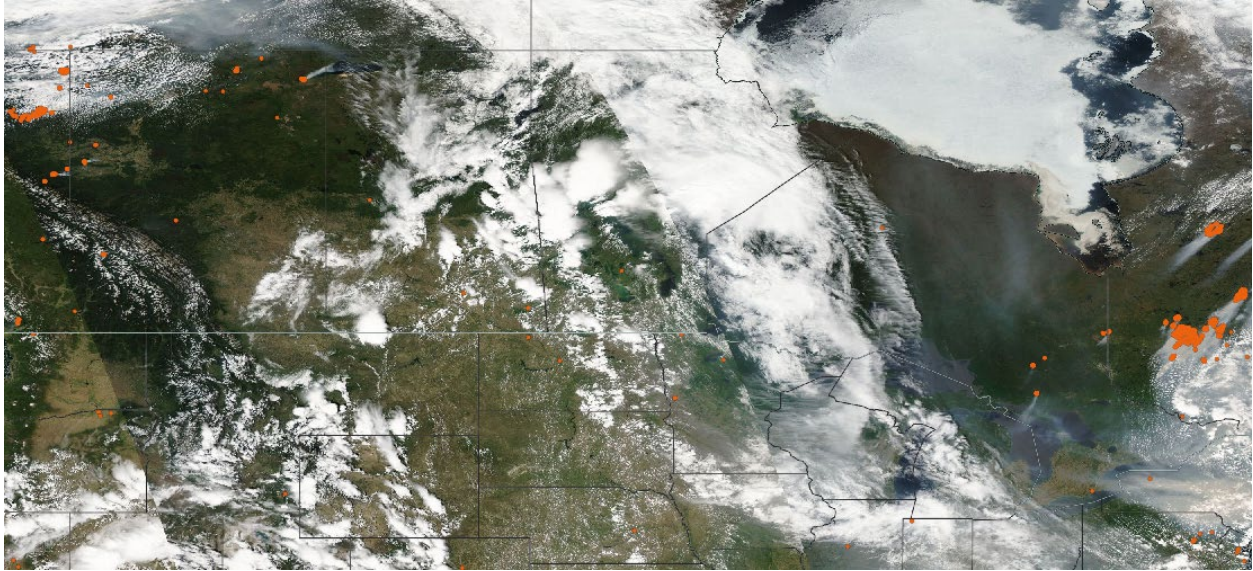
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 6, 2023.

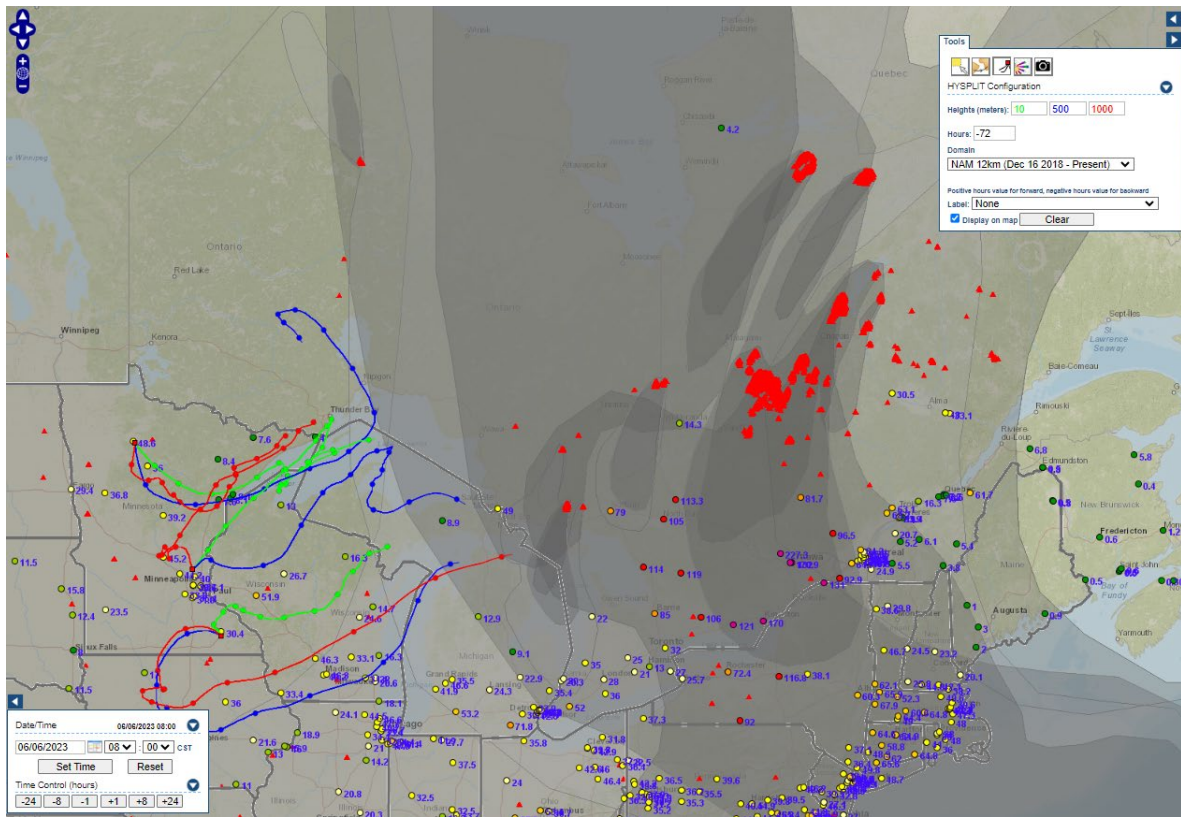
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	6/6/2023	31.9	37.6	Canada Wildfire Smoke
Blaine	270031002	6/6/2023	26.4	46	Canada Wildfire Smoke
Brainerd	270353204	6/6/2023	30.6	51.9	Canada Wildfire Smoke
Detroit Lakes	270052013	6/6/2023	24.7	38.5	Canada Wildfire Smoke
Fargo NW	380171004	6/6/2023	21.5	29.4	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/6/2023	28.3	32.7	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/6/2023	27.5	47	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/6/2023	33.2	42.6	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/6/2023	31.1	39.9	Canada Wildfire Smoke
Red Lake Nation	270072304	6/6/2023	34.5	55.2	Canada Wildfire Smoke
Rochester	271095008	6/6/2023	27.0	34.8	Canada Wildfire Smoke
Shakopee	271390505	6/6/2023	30.5	38.3	Canada Wildfire Smoke
St. Cloud	271453052	6/6/2023	35.3	48.3	Canada Wildfire Smoke
St. Michael	271713201	6/6/2023	35.6	44.7	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/6/2023	30.9	37.8	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 6, 2023.



MODIS visible satellite for June 6, 2023.



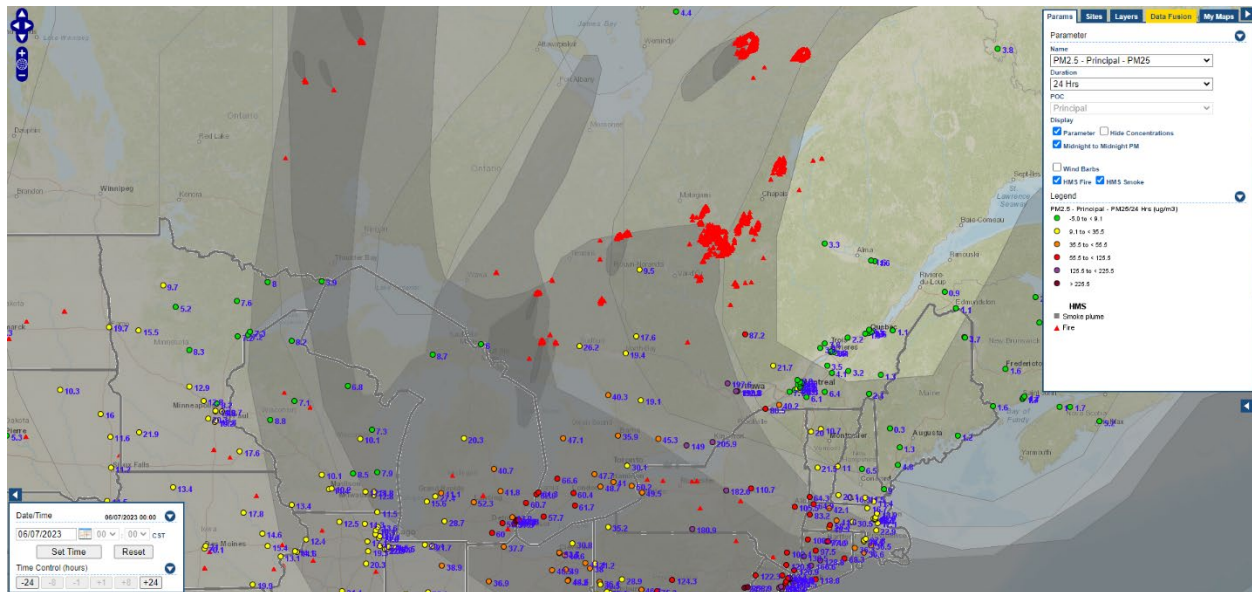
Backward trajectories for June 6, 2023.

6/7/2023 Impacts

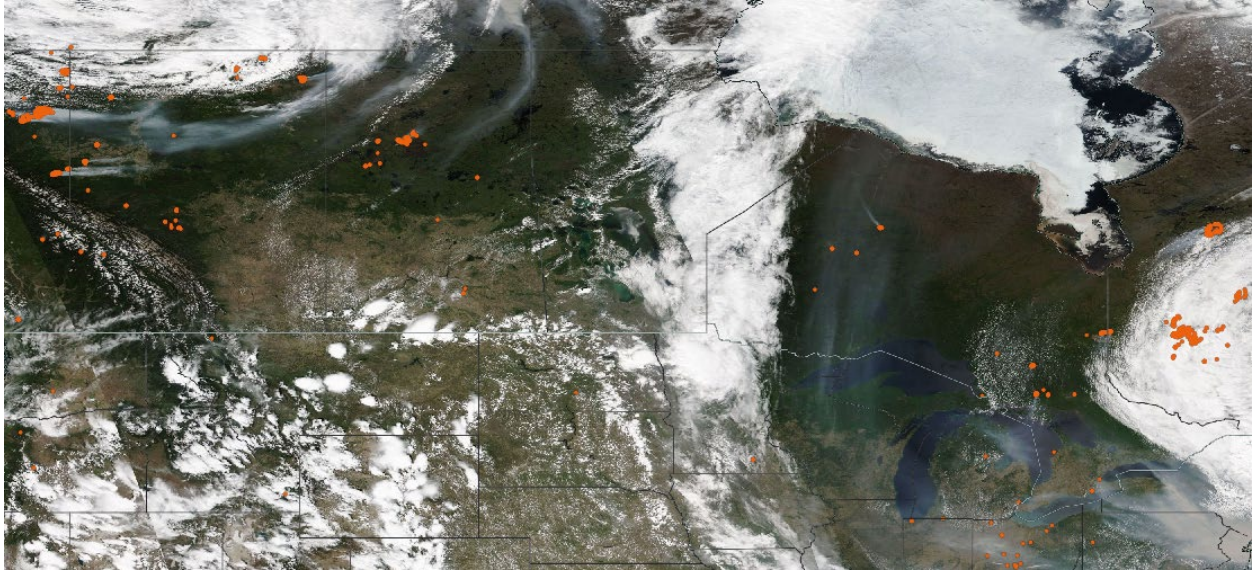
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 7, 2023.

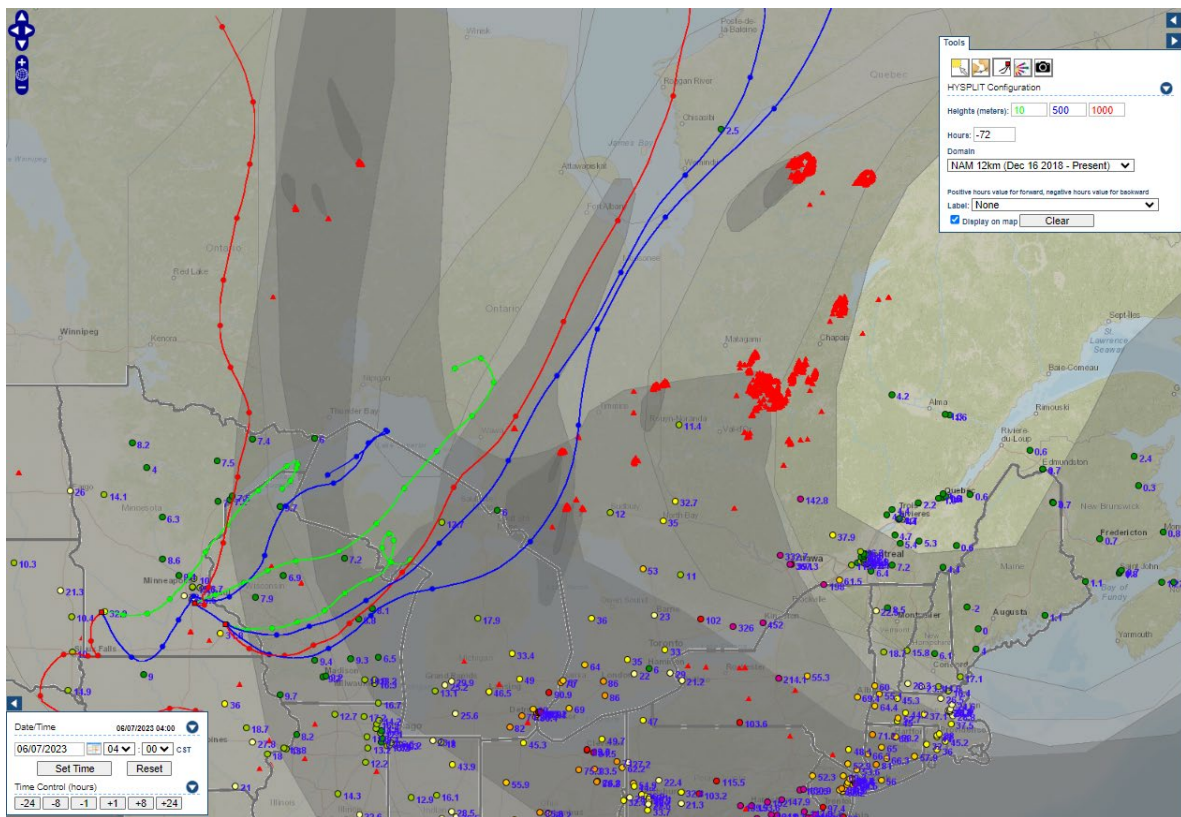
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	6/7/2023	19.4	36.4	Canada Wildfire Smoke
Fargo NW	380171004	6/7/2023	19.8	26	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/7/2023	19.2	35.3	Canada Wildfire Smoke
Marshall	270834210	6/7/2023	21.9	32.9	Canada Wildfire Smoke
Rochester	271095008	6/7/2023	17.7	37.8	Canada Wildfire Smoke
Shakopee	271390505	6/7/2023	20.3	37.2	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 7, 2023.



MODIS visible satellite for June 7, 2023.



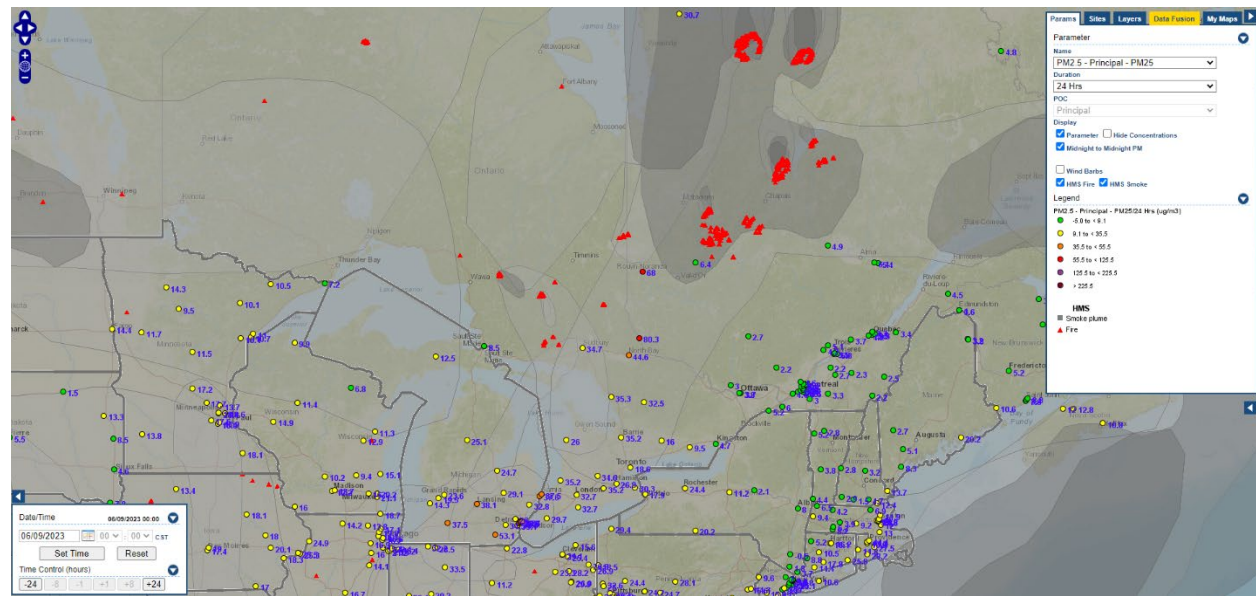
Backward trajectories for June 7, 2023.

6/9/2023 Impacts

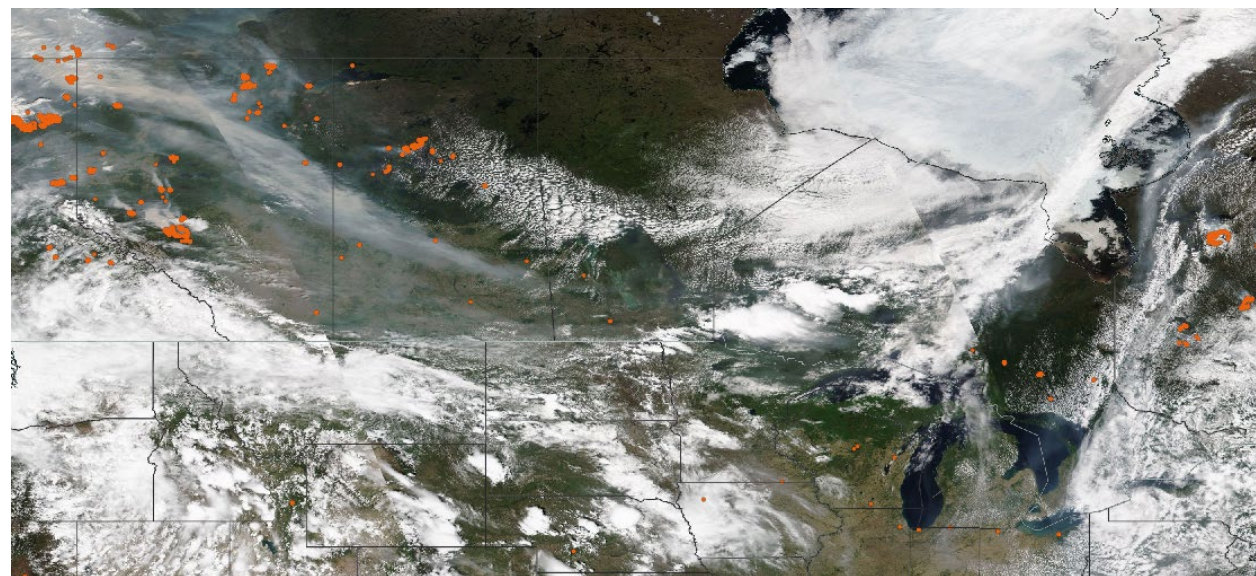
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 9, 2023.

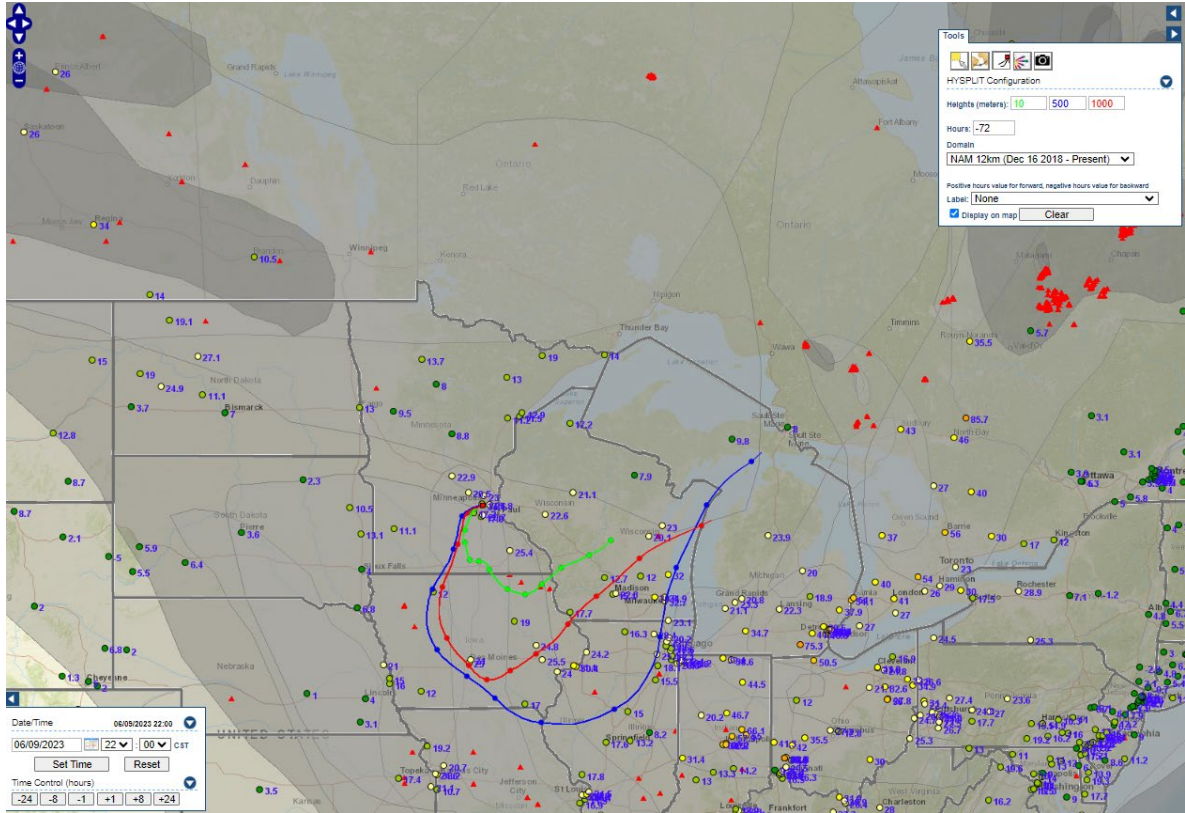
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Minneapolis - Phillips	270530963	6/9/2023	21.1	62	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 9, 2023.



MODIS visible satellite for June 9, 2023.



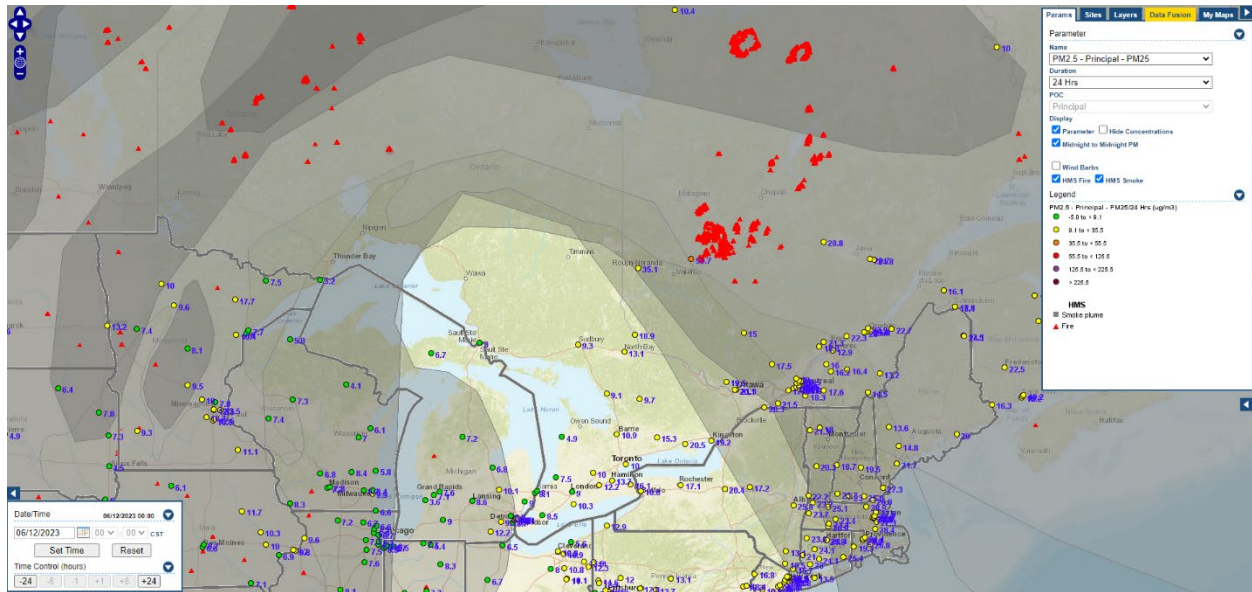
Backward trajectories for June 9, 2023.

6/12/2023 Impacts

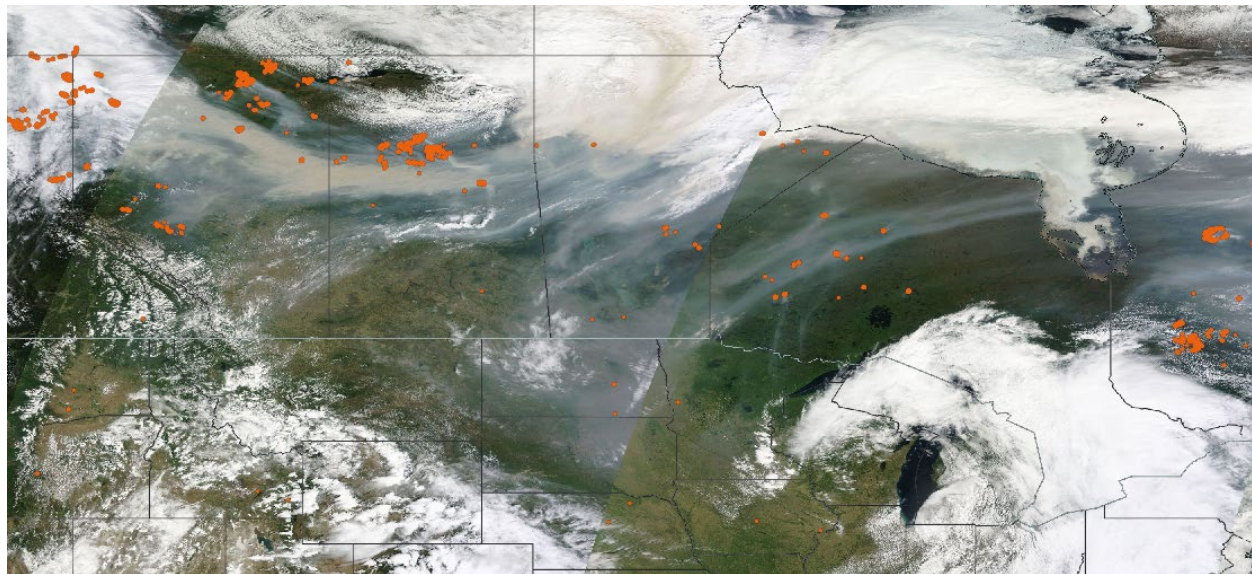
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 12, 2023.

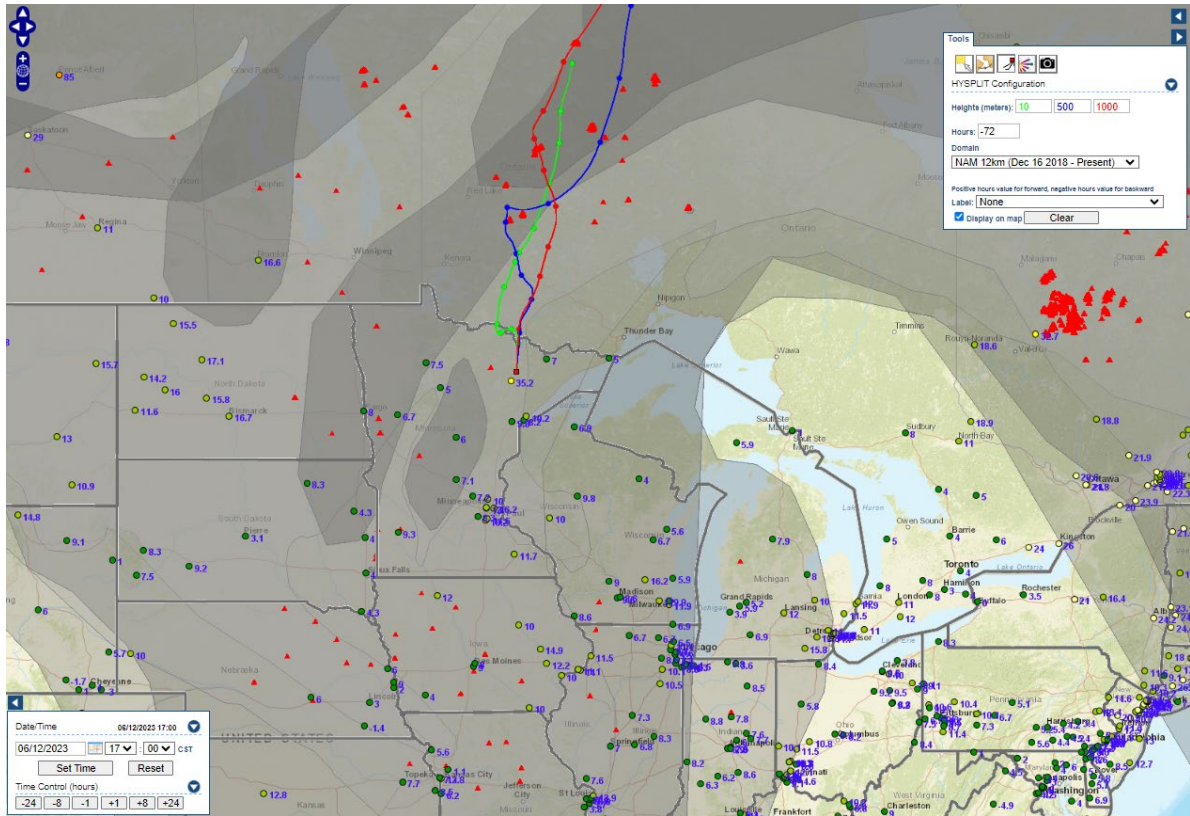
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Virginia	271377001	6/12/2023	17.8	35.2	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 12, 2023.



MODIS visible satellite for June 12, 2023.



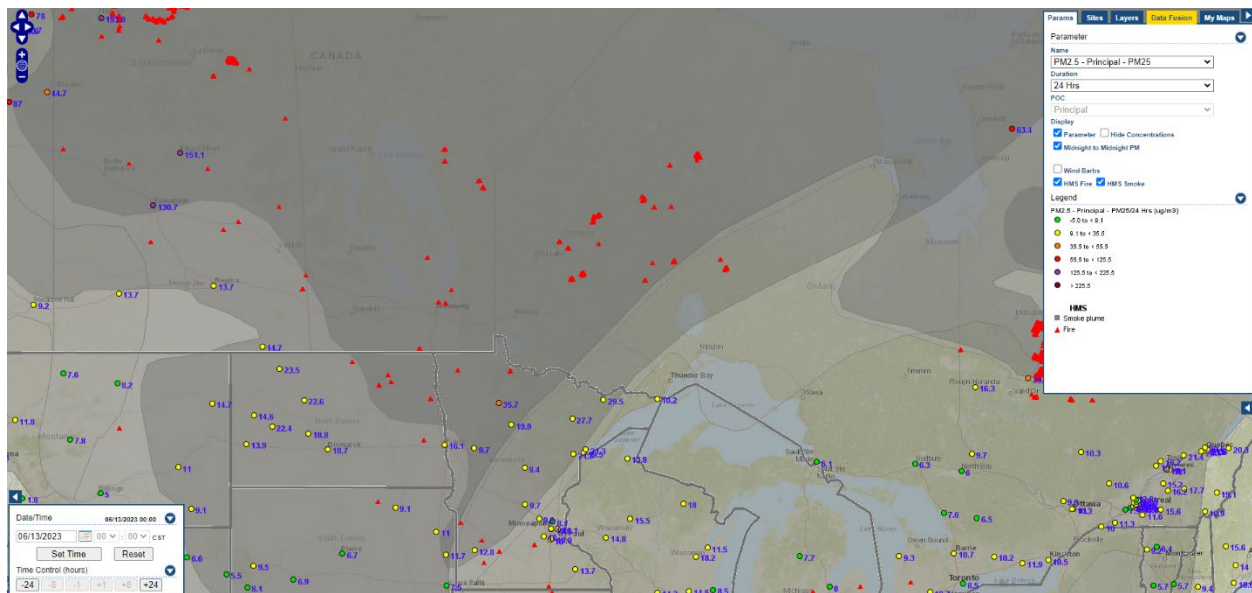
Backward trajectories for June 12, 2023.

6/13/2023 Impacts

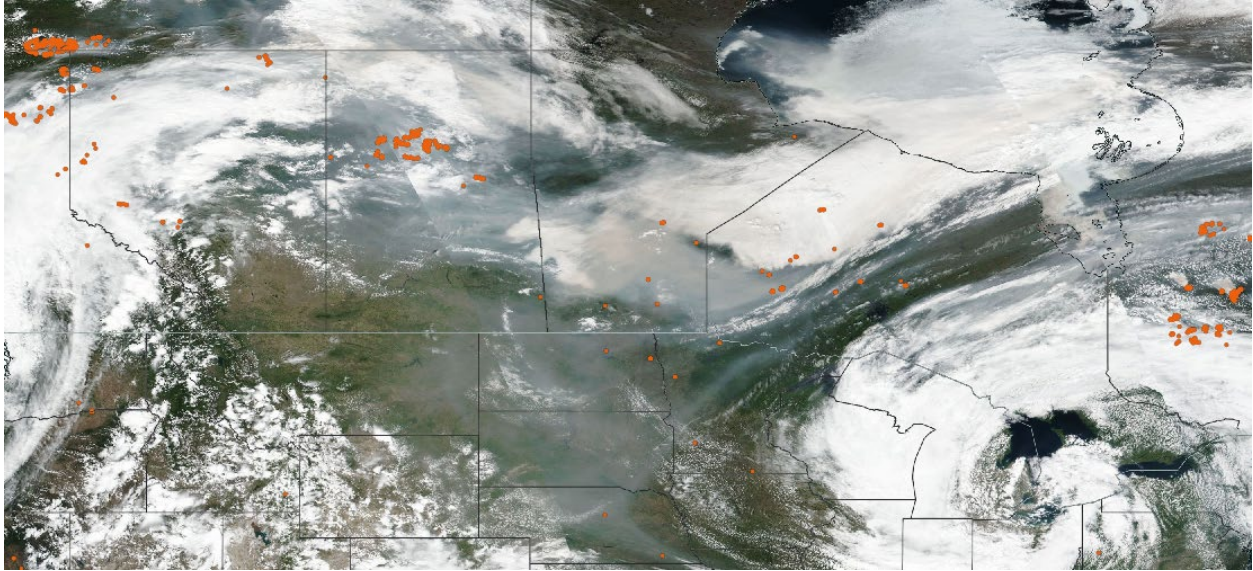
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 13, 2023.

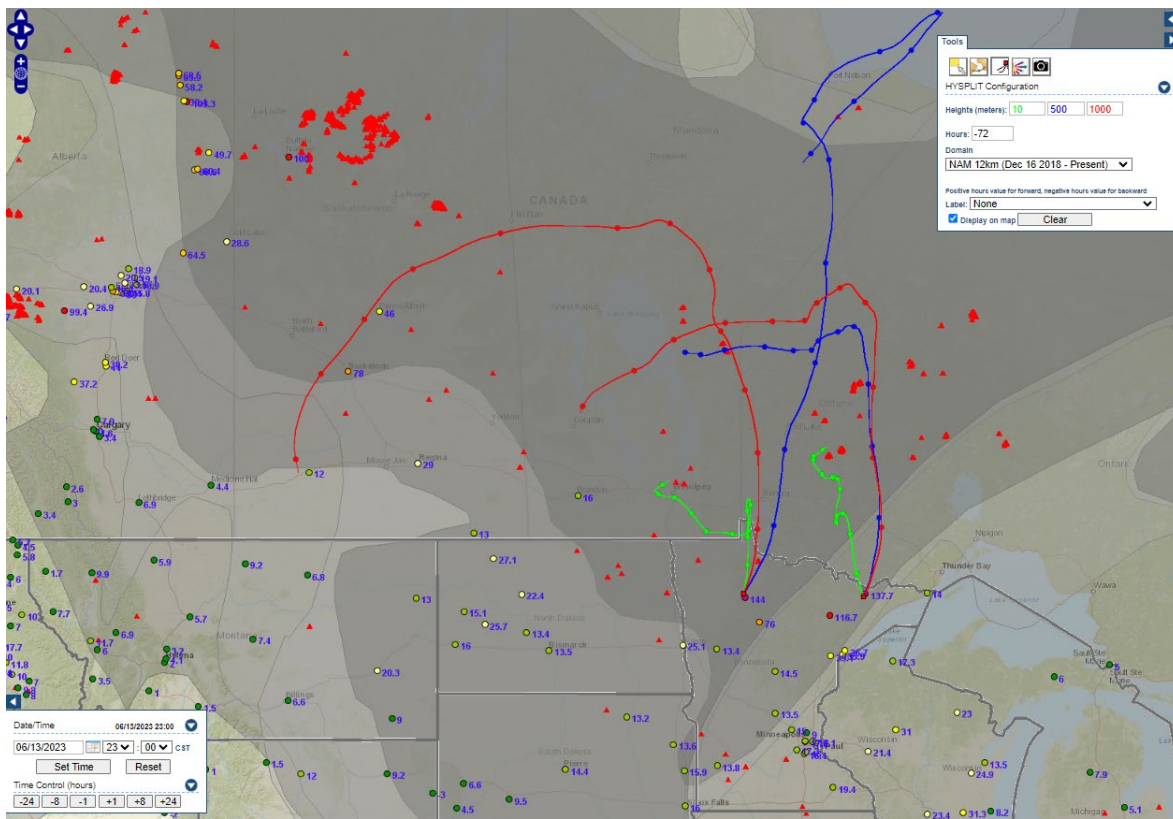
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Duluth-WDSE	271377550	6/13/2023	21.4	49.9	Canada Wildfire Smoke
Ely	270750005	6/13/2023	29.6	137.7	Canada Wildfire Smoke
Fond du Lac	270177417	6/13/2023	21.4	42.1	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/13/2023	20.0	76	Canada Wildfire Smoke
Red Lake Nation	270072304	6/13/2023	35.8	145.1	Canada Wildfire Smoke
Virginia	271377001	6/13/2023	27.7	116.7	Canada Wildfire Smoke
West Duluth	271377554	6/13/2023	19.5	45.8	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 13, 2023.



MODIS visible satellite for June 13, 2023.



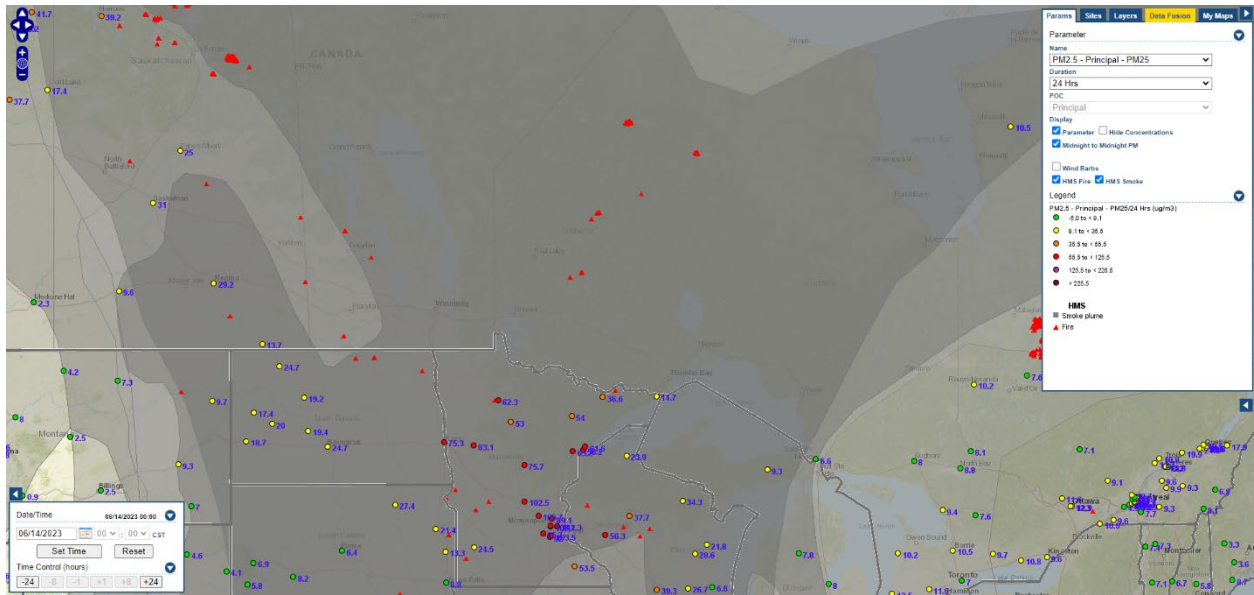
Backward trajectories for June 13, 2023.

6/14/2023 Impacts

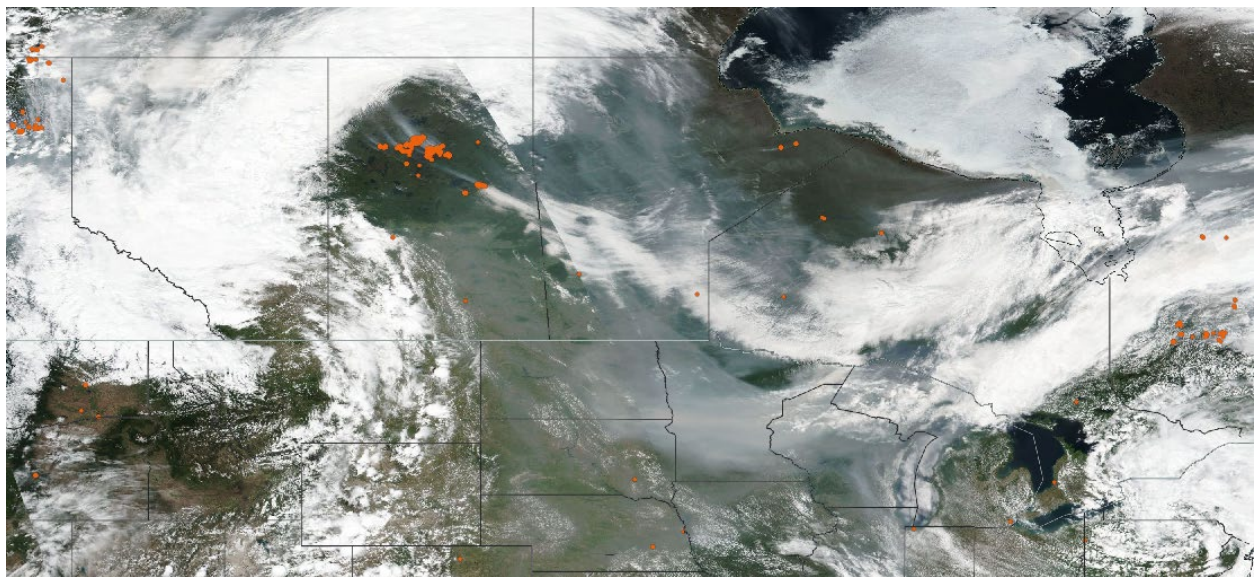
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 14, 2023.

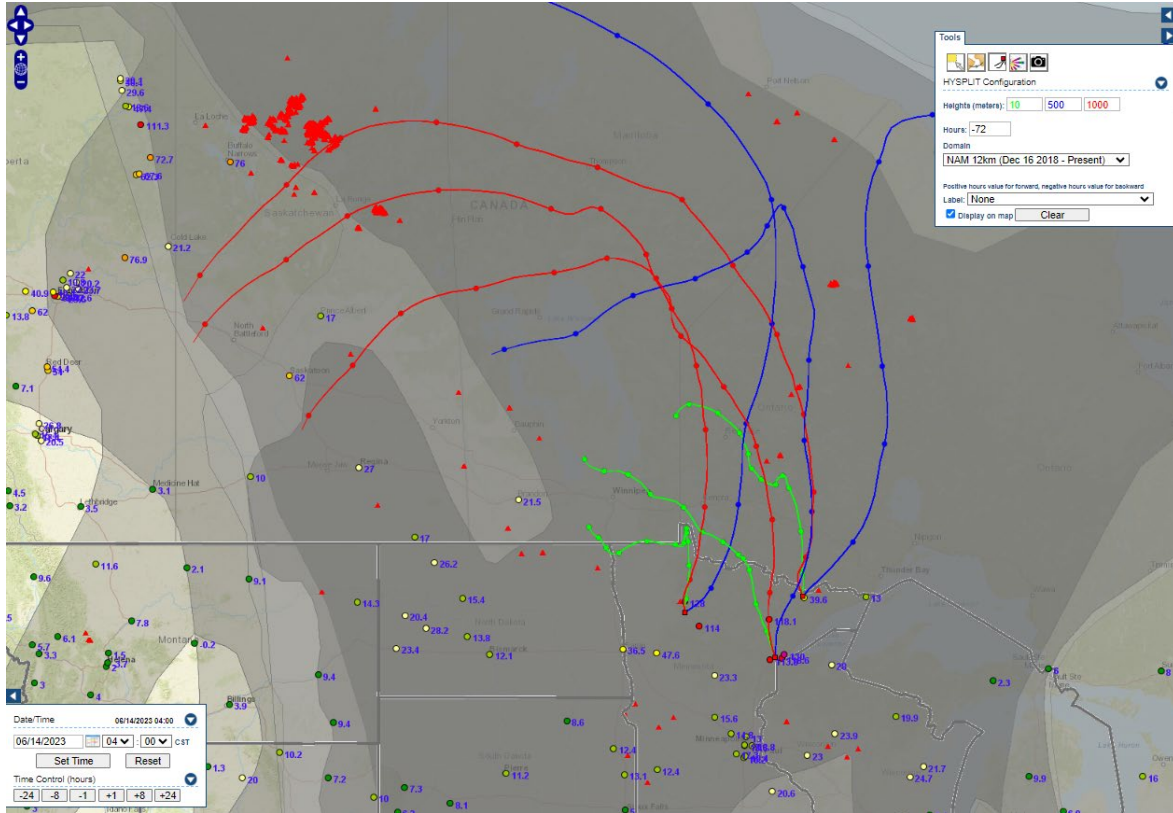
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	6/14/2023	103.6	231.5	Canada Wildfire Smoke
Blaine	270031002	6/14/2023	89.2	158	Canada Wildfire Smoke
Brainerd	270353204	6/14/2023	75.8	151.8	Canada Wildfire Smoke
Detroit Lakes	270052013	6/14/2023	83.2	138.5	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/14/2023	61.6	136.3	Canada Wildfire Smoke
Ely	270750005	6/14/2023	36.7	135.1	Canada Wildfire Smoke
Fargo NW	380171004	6/14/2023	75.4	137	Canada Wildfire Smoke
Fond du Lac	270177417	6/14/2023	63.2	128.8	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/14/2023	92.1	216.9	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/14/2023	53.1	114	Canada Wildfire Smoke
Marshall	270834210	6/14/2023	24.6	43.9	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/14/2023	107.1	203.5	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/14/2023	105.3	203.7	Canada Wildfire Smoke
Red Lake Nation	270072304	6/14/2023	62.3	175.6	Canada Wildfire Smoke
Rochester	271095008	6/14/2023	53.6	165.8	Canada Wildfire Smoke
Shakopee	271390505	6/14/2023	95.7	198.9	Canada Wildfire Smoke
St. Cloud	271453052	6/14/2023	102.5	159.6	Canada Wildfire Smoke
St. Michael	271713201	6/14/2023	105.8	183.8	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/14/2023	111.4	220.9	Canada Wildfire Smoke
Virginia	271377001	6/14/2023	54.1	147.2	Canada Wildfire Smoke
West Duluth	271377554	6/14/2023	58.3	124.6	Canada Wildfire Smoke



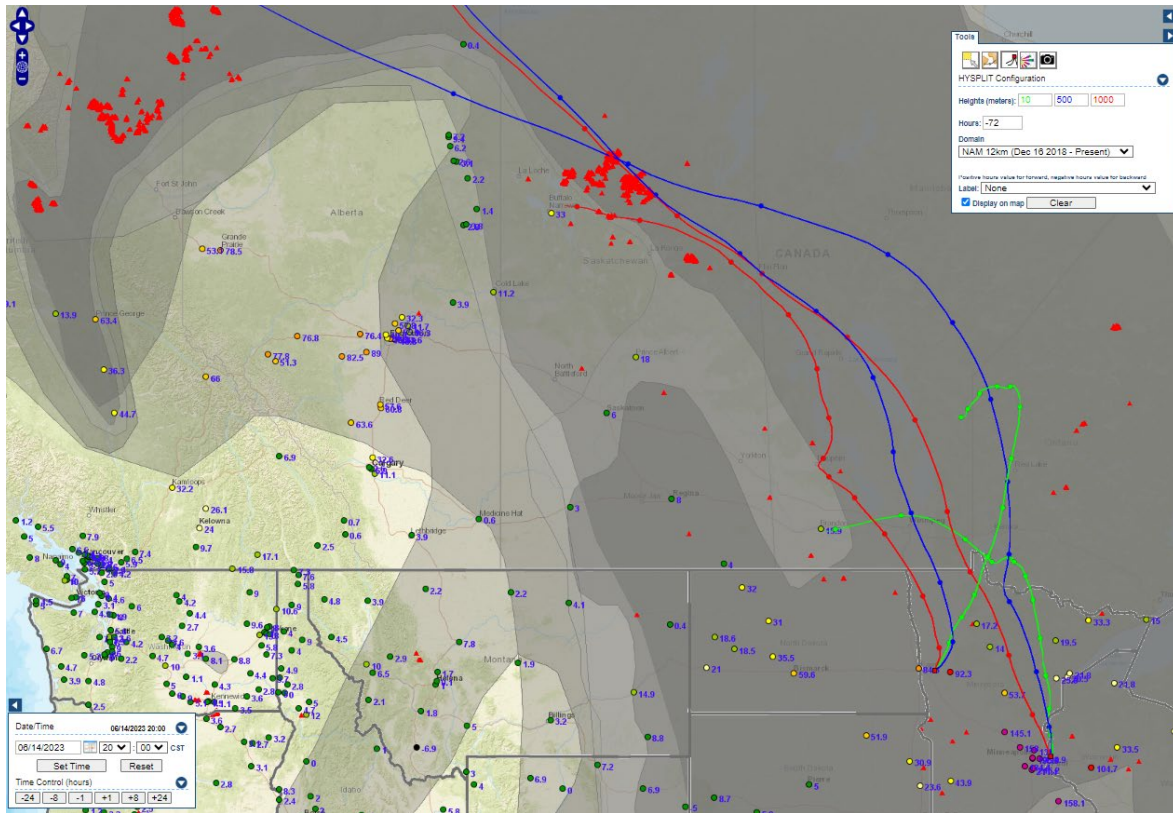
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 14, 2023.



MODIS visible satellite for June 14, 2023.



Backward trajectories for June 14, 2023.



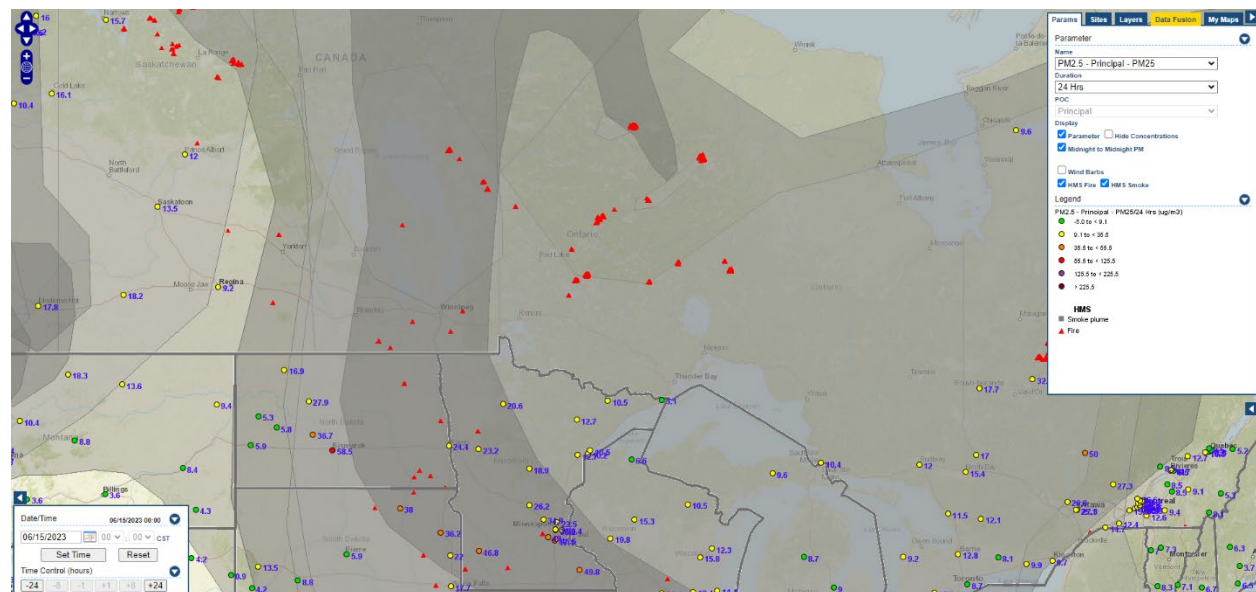
Backward trajectories for June 14, 2023.

6/15/2023 Impacts

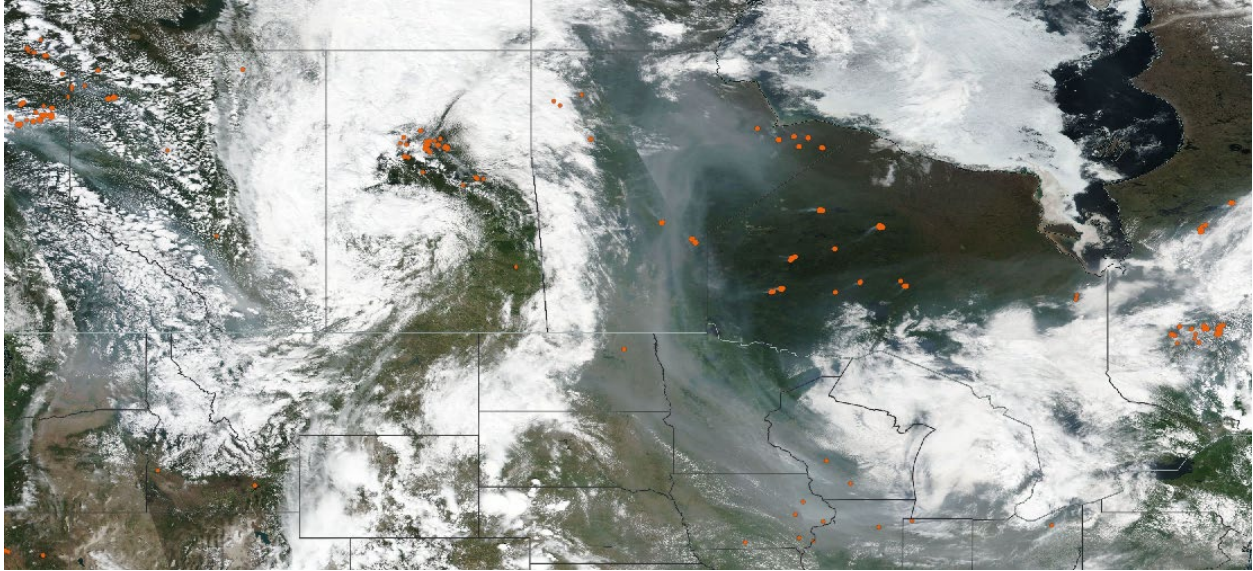
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 15, 2023.

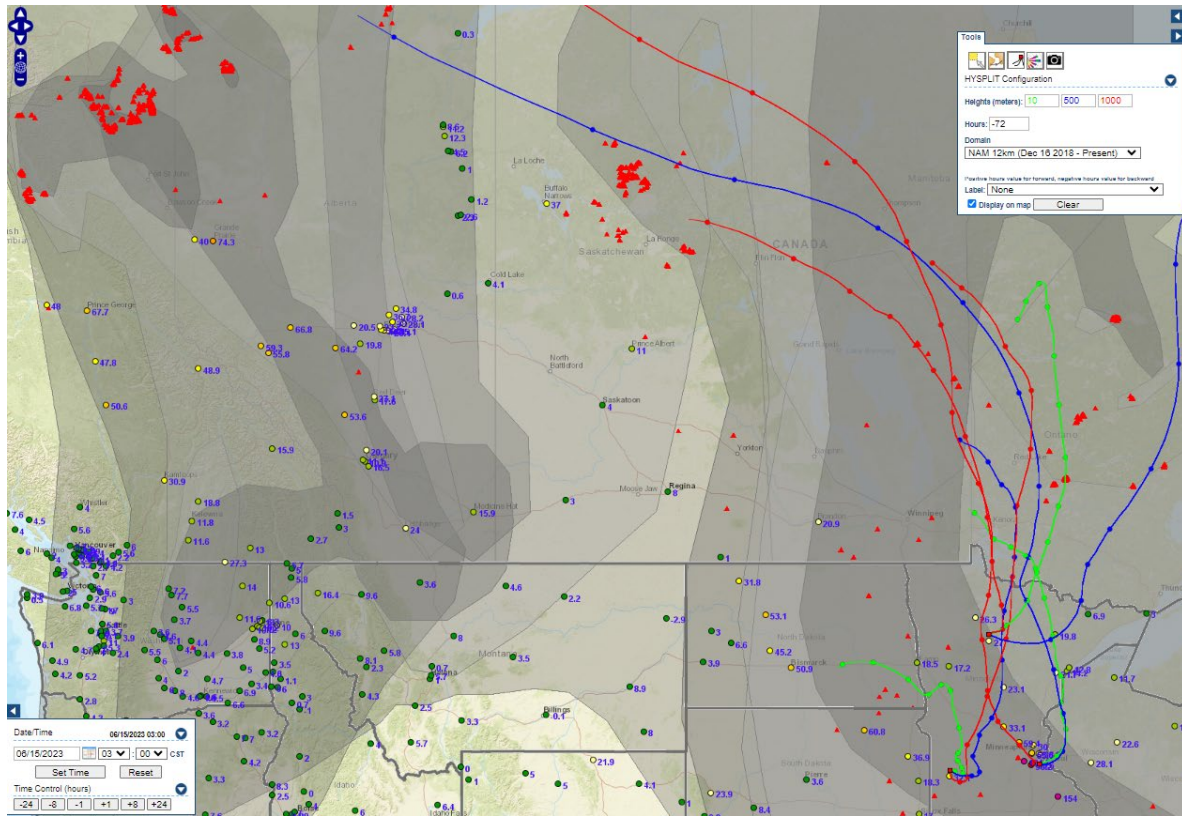
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	6/15/2023	46.7	204	Canada Wildfire Smoke
Blaine	270031002	6/15/2023	22.6	86	Canada Wildfire Smoke
Brainerd	270353204	6/15/2023	18.9	24.4	Canada Wildfire Smoke
Detroit Lakes	270052013	6/15/2023	23.2	28.8	Canada Wildfire Smoke
Fargo NW	380171004	6/15/2023	24.5	29.6	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/15/2023	47.1	194	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/15/2023	18.9	30	Canada Wildfire Smoke
Marshall	270834210	6/15/2023	46.8	70.8	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/15/2023	36.2	151.5	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/15/2023	35.2	143.9	Canada Wildfire Smoke
Red Lake Nation	270072304	6/15/2023	20.6	29.5	Canada Wildfire Smoke
Rochester	271095008	6/15/2023	49.9	154	Canada Wildfire Smoke
Shakopee	271390505	6/15/2023	49.1	176.5	Canada Wildfire Smoke
St. Cloud	271453052	6/15/2023	26.3	70.4	Canada Wildfire Smoke
St. Michael	271713201	6/15/2023	34.9	129.4	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/15/2023	30.5	121	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 15, 2023.



MODIS visible satellite for June 15, 2023.



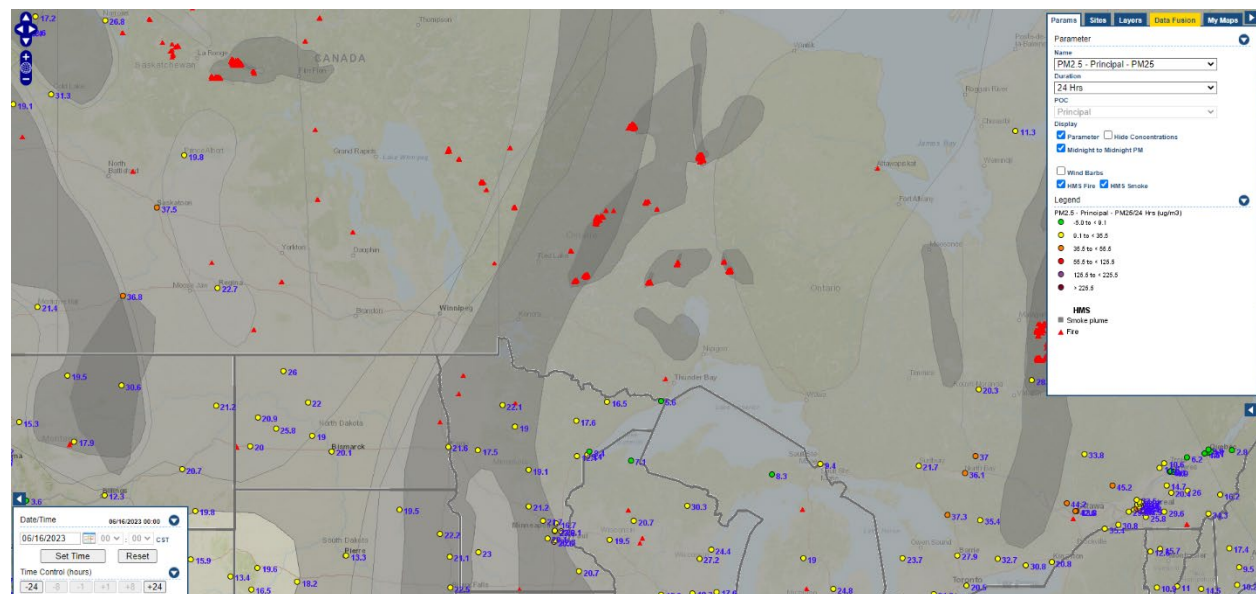
Backward trajectories for June 15, 2023.

6/16/2023 Impacts

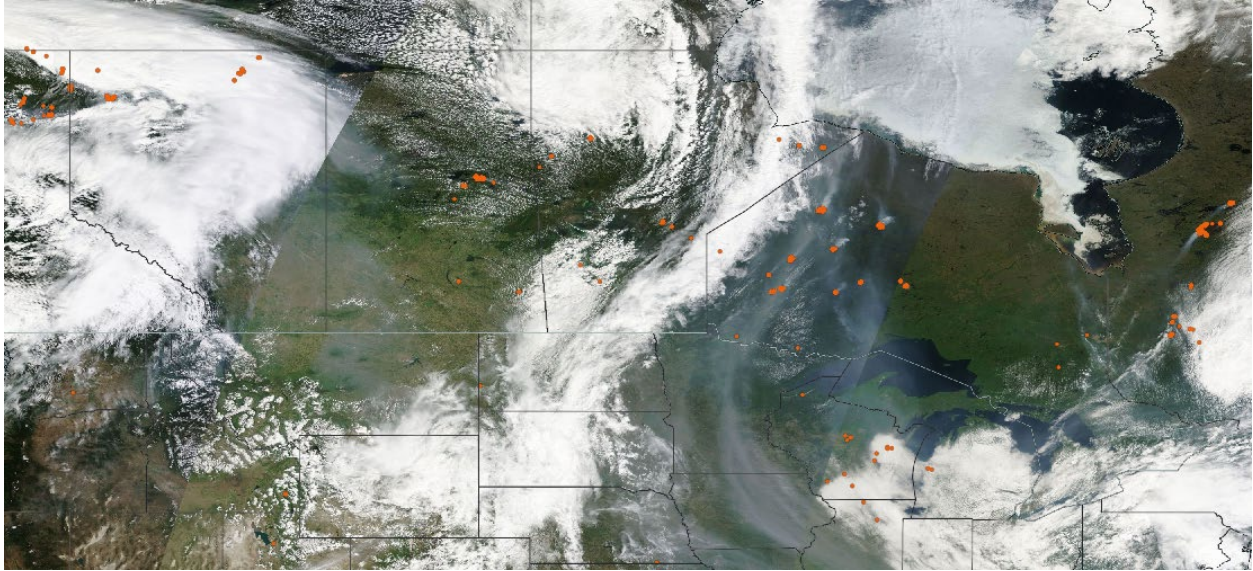
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 16, 2023.

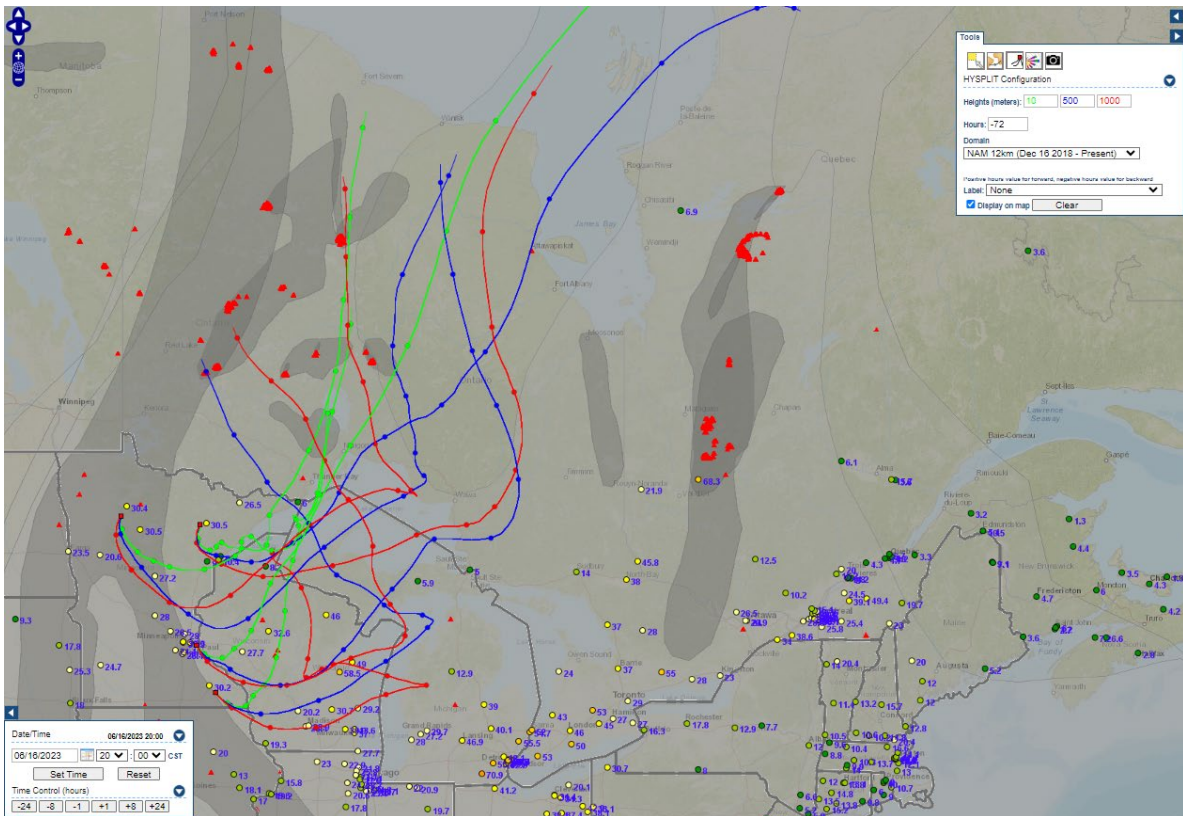
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	6/16/2023	22.4	33.6	Canada Wildfire Smoke
Brainerd	270353204	6/16/2023	19.1	30.3	Canada Wildfire Smoke
Ely	270750005	6/16/2023	16.6	26.5	Canada Wildfire Smoke
Fargo NW	380171004	6/16/2023	21.6	27.8	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/16/2023	20.7	30.8	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/16/2023	19.0	30.5	Canada Wildfire Smoke
Marshall	270834210	6/16/2023	23.1	28.2	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/16/2023	23.7	49.9	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/16/2023	23.0	42.2	Canada Wildfire Smoke
Red Lake Nation	270072304	6/16/2023	22.2	30.4	Canada Wildfire Smoke
Rochester	271095008	6/16/2023	20.7	36.4	Canada Wildfire Smoke
Shakopee	271390505	6/16/2023	20.5	31.8	Canada Wildfire Smoke
St. Cloud	271453052	6/16/2023	21.2	29.5	Canada Wildfire Smoke
St. Michael	271713201	6/16/2023	21.7	30.6	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/16/2023	22.2	44.3	Canada Wildfire Smoke
Virginia	271377001	6/16/2023	17.6	30.5	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 16, 2023.



MODIS visible satellite for June 16, 2023.



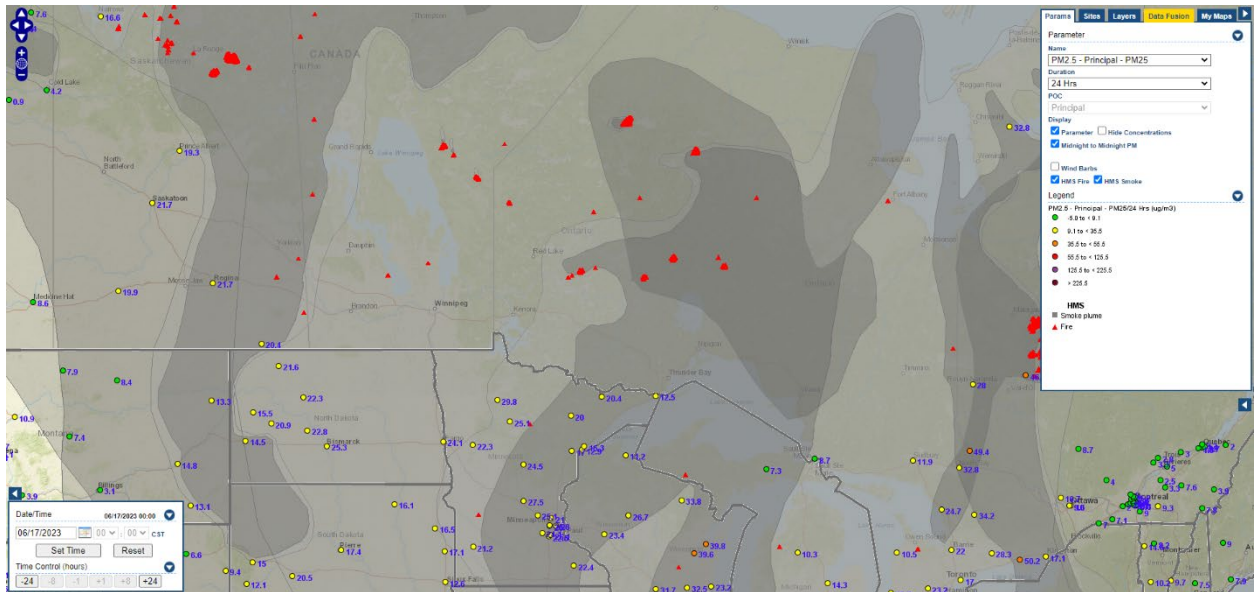
Backward trajectories for June 16, 2023.

6/17/2023 Impacts

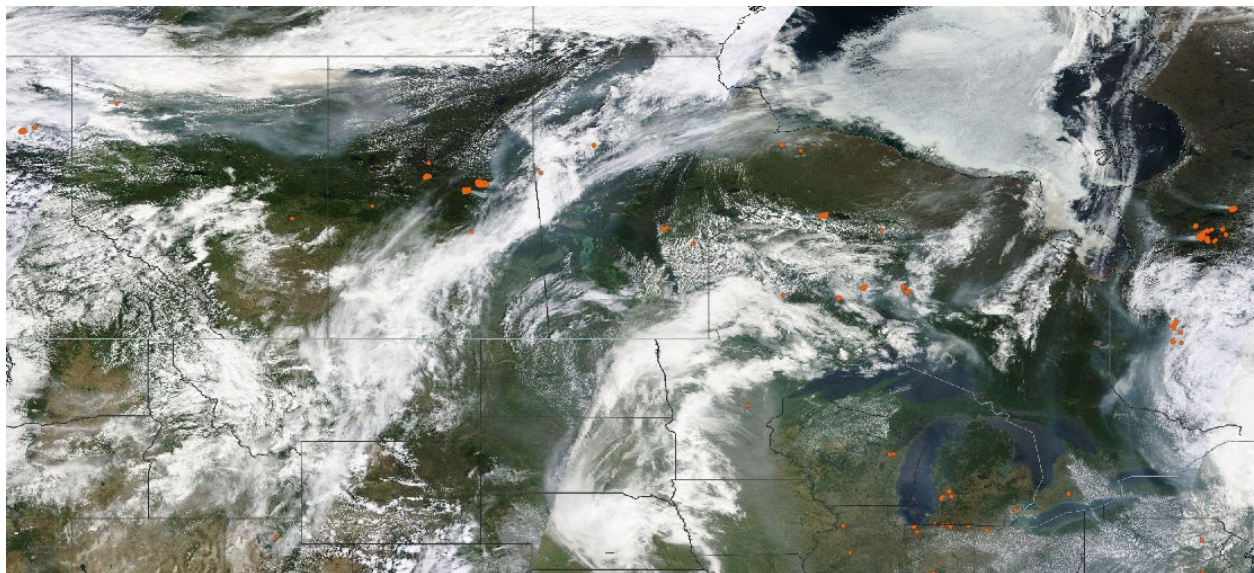
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 17, 2023.

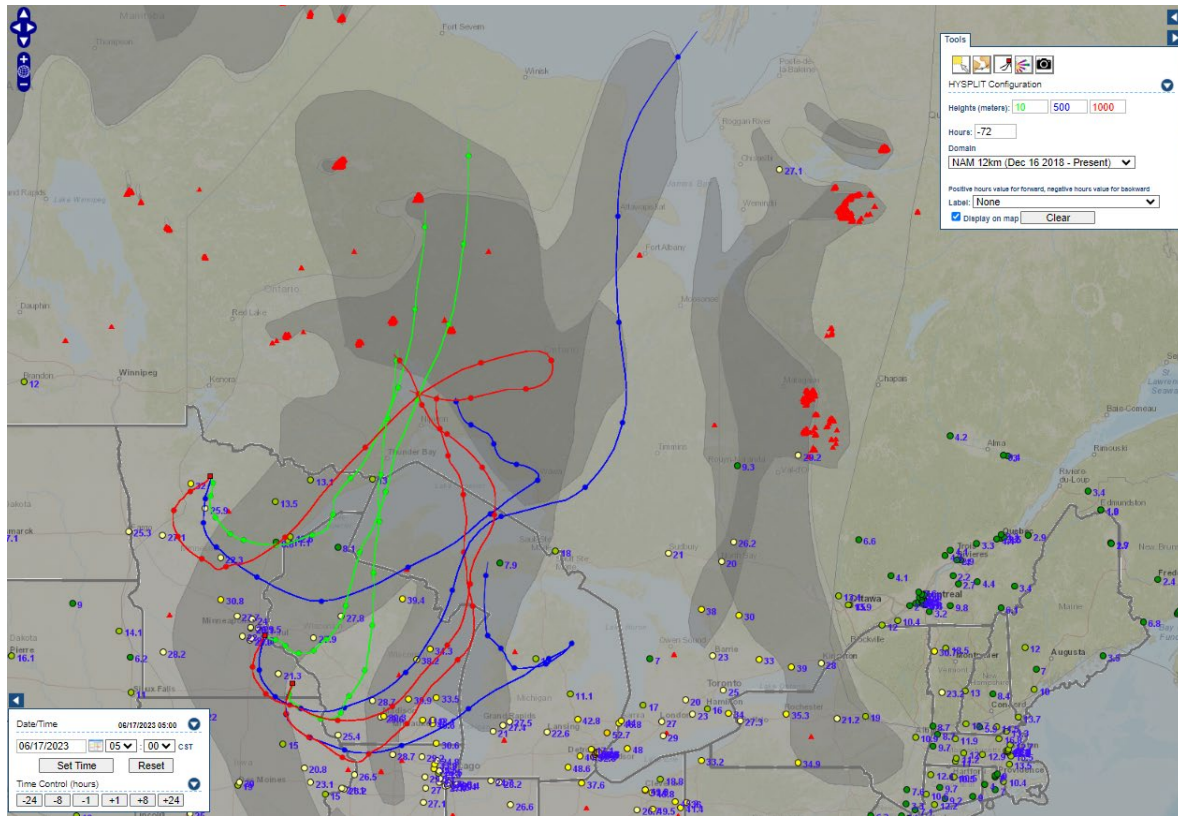
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	6/17/2023	26.1	36.7	Canada Wildfire Smoke
Blaine	270031002	6/17/2023	21.0	42	Canada Wildfire Smoke
Brainerd	270353204	6/17/2023	24.5	26.7	Canada Wildfire Smoke
Detroit Lakes	270052013	6/17/2023	22.3	27.1	Canada Wildfire Smoke
Ely	270750005	6/17/2023	20.5	25.8	Canada Wildfire Smoke
Fargo NW	380171004	6/17/2023	24.1	28	Canada Wildfire Smoke
Fond du Lac	270177417	6/17/2023	17.0	25	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/17/2023	22.6	27.3	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/17/2023	25.2	28.6	Canada Wildfire Smoke
Marshall	270834210	6/17/2023	21.2	33.5	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/17/2023	26.1	43.3	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/17/2023	25.7	39.2	Canada Wildfire Smoke
Red Lake Nation	270072304	6/17/2023	29.9	33.4	Canada Wildfire Smoke
Rochester	271095008	6/17/2023	22.5	30.8	Canada Wildfire Smoke
Shakopee	271390505	6/17/2023	24.2	37.6	Canada Wildfire Smoke
St. Cloud	271453052	6/17/2023	27.6	31.9	Canada Wildfire Smoke
St. Michael	271713201	6/17/2023	25.1	31.4	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/17/2023	23.1	33.7	Canada Wildfire Smoke
Virginia	271377001	6/17/2023	20.1	26.2	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 17, 2023.



MODIS visible satellite for June 17, 2023.



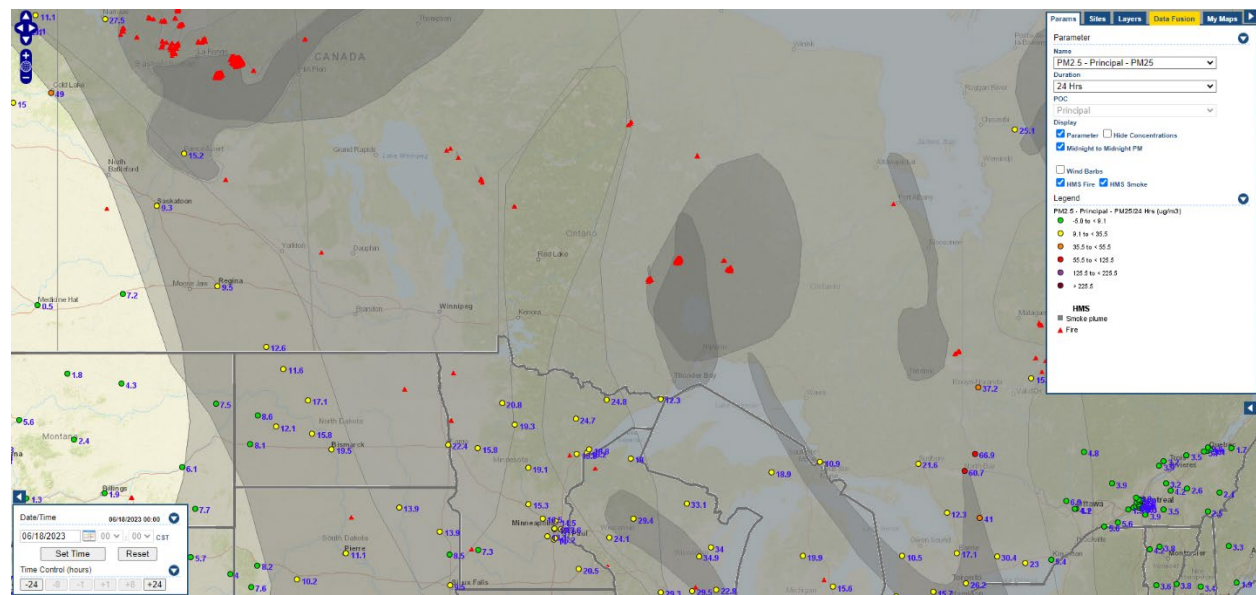
Backward trajectories for June 17, 2023.

6/18/2023 Impacts

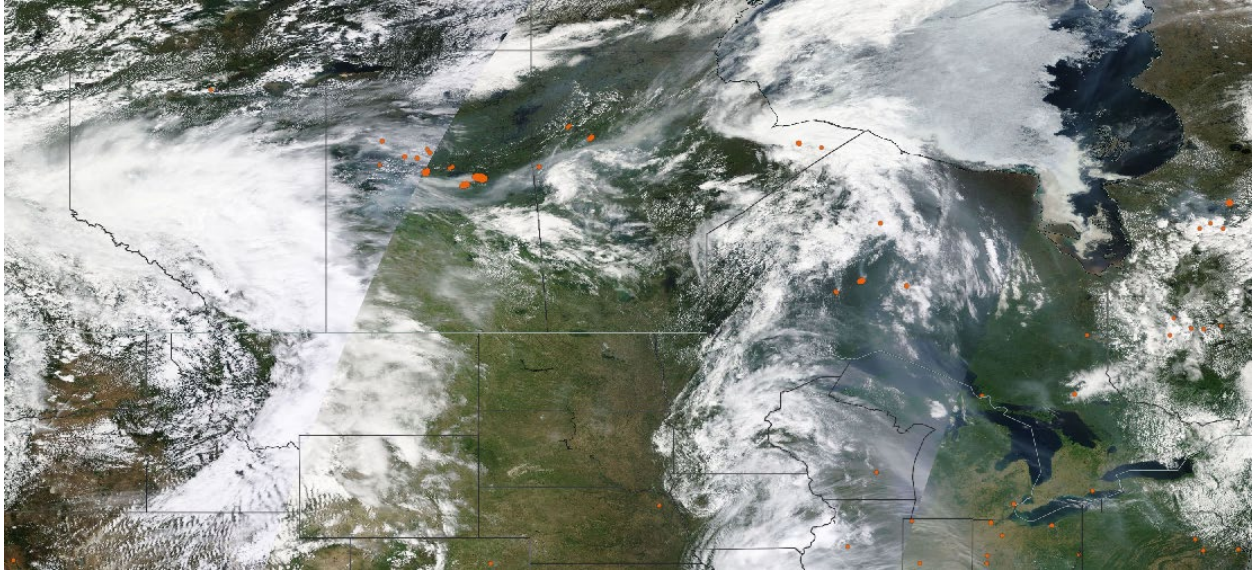
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 18, 2023.

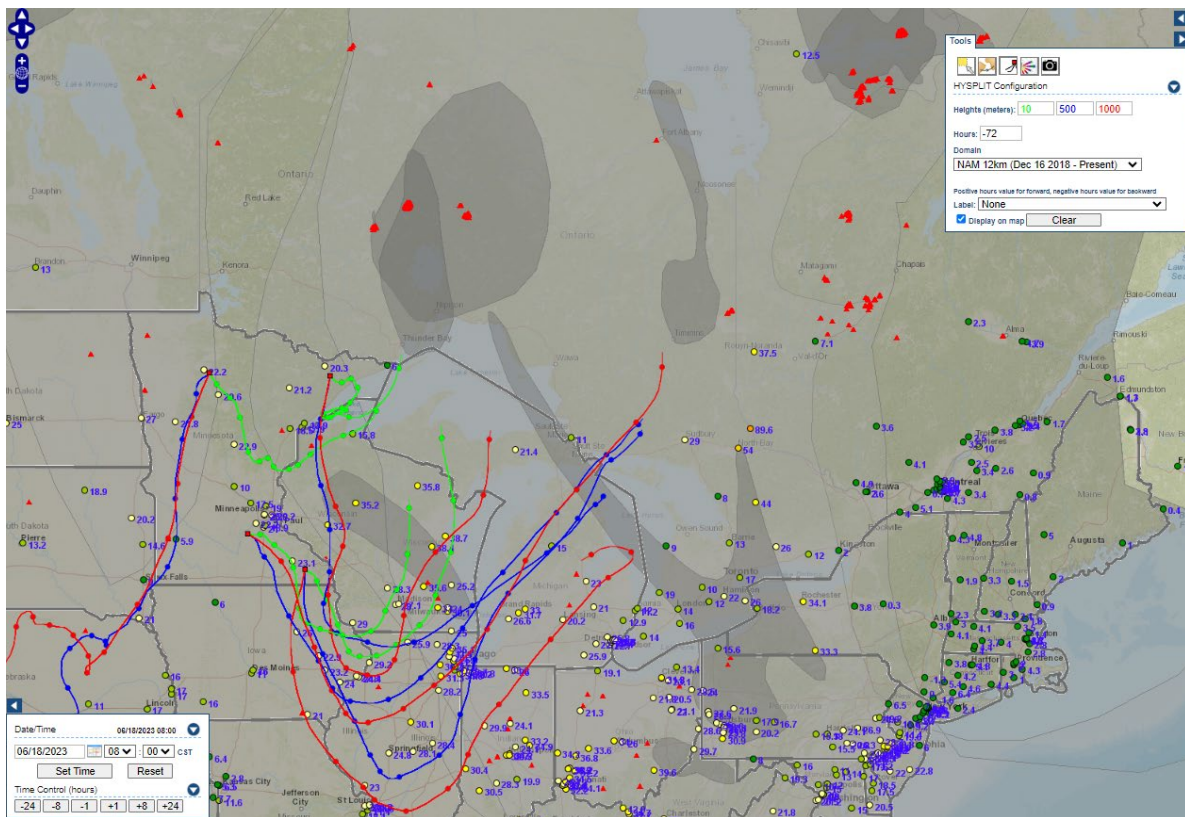
Site	Site AQS	Date (LST)	Daily average (µg/m3)	Max hour (µg/m3)	Notes
Brainerd	270353204	6/18/2023	19.1	23.1	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/18/2023	18.9	26.4	Canada Wildfire Smoke
Ely	270750005	6/18/2023	24.9	30.6	Canada Wildfire Smoke
Fargo NW	380171004	6/18/2023	22.5	28.3	Canada Wildfire Smoke
Fond du Lac	270177417	6/18/2023	19.9	23	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/18/2023	19.3	26.8	Canada Wildfire Smoke
Red Lake Nation	270072304	6/18/2023	20.9	30	Canada Wildfire Smoke
Rochester	271095008	6/18/2023	20.6	30.3	Canada Wildfire Smoke
Virginia	271377001	6/18/2023	24.8	28.3	Canada Wildfire Smoke
West Duluth	271377554	6/18/2023	16.2	25.7	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 18, 2023.



MODIS visible satellite for June 18, 2023.



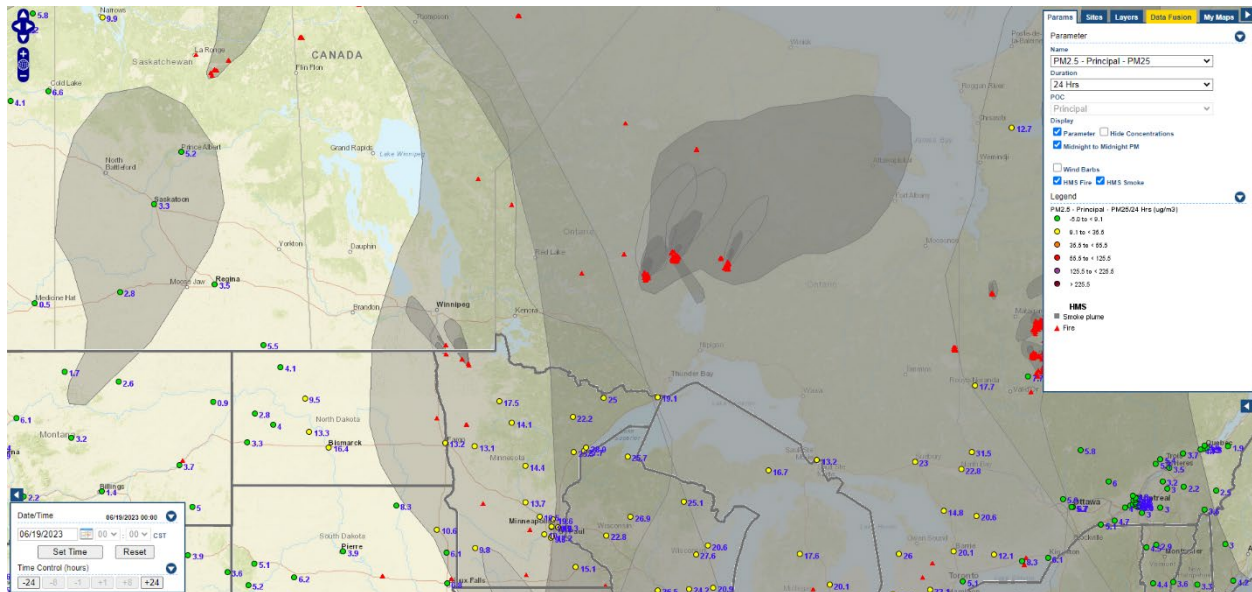
Backward trajectories for June 18, 2023.

6/19/2023 Impacts

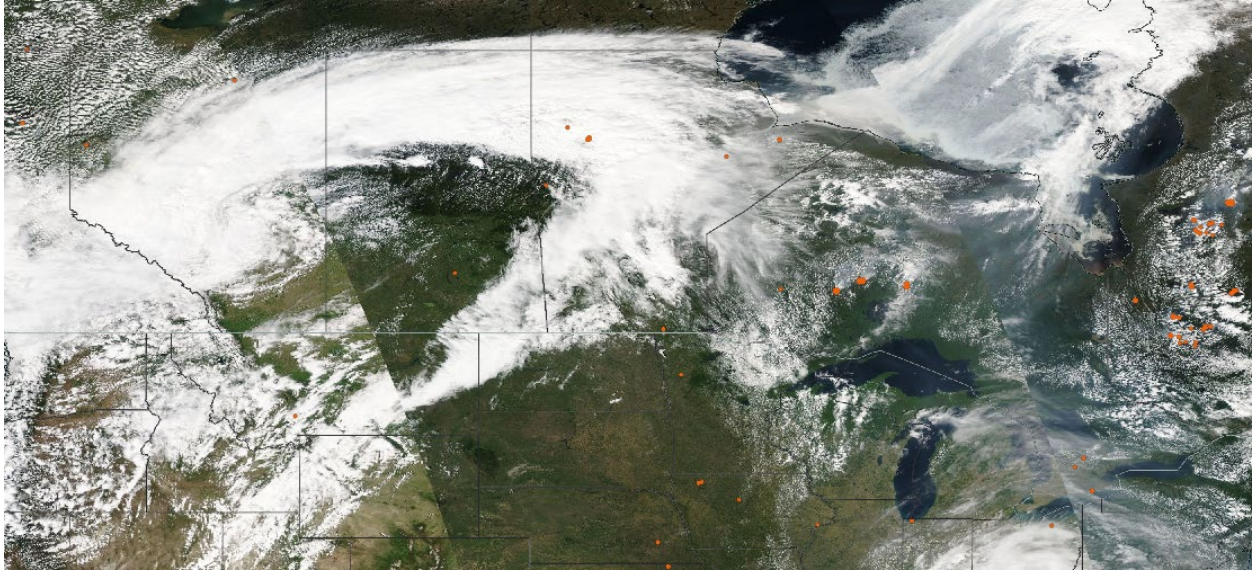
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 19, 2023.

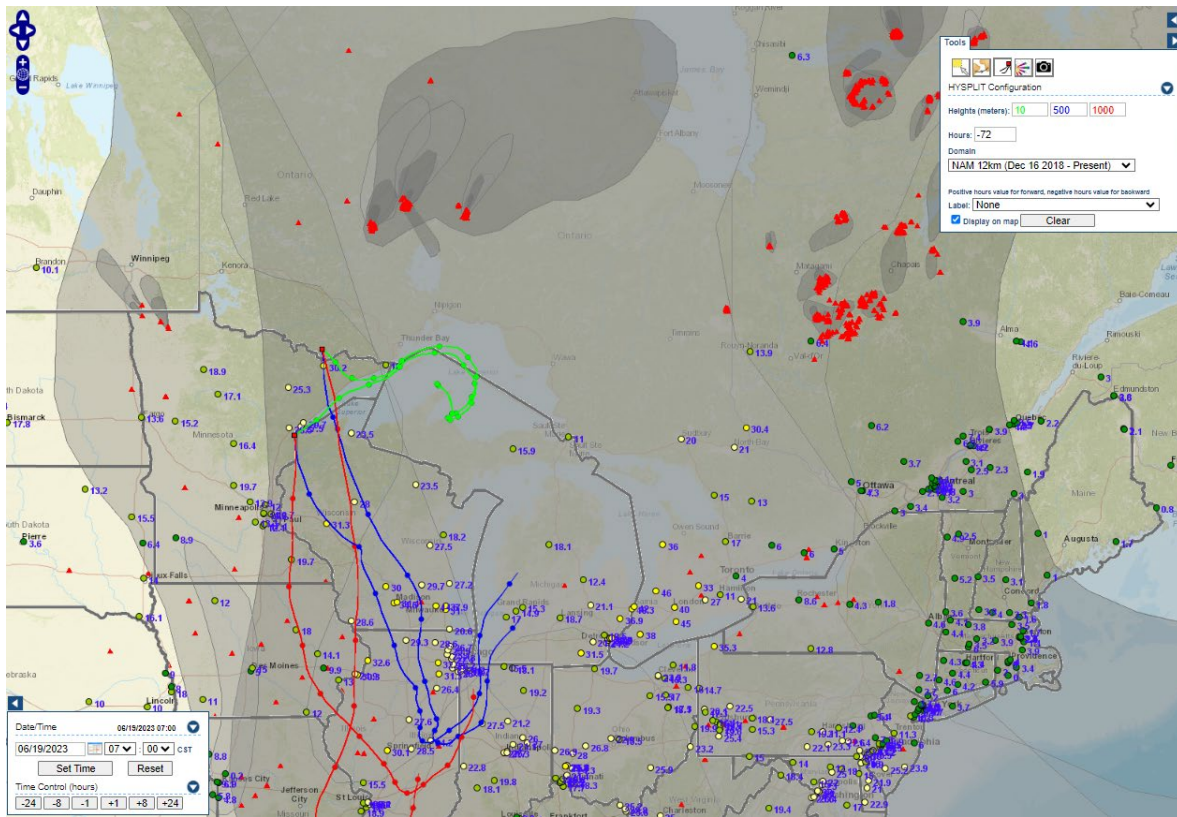
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Blaine	270031002	6/19/2023	19.7	44	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/19/2023	29.0	32.8	Canada Wildfire Smoke
Ely	270750005	6/19/2023	25.0	30.9	Canada Wildfire Smoke
Fond du Lac	270177417	6/19/2023	25.6	29	Canada Wildfire Smoke
Grand Portage	270317810	6/19/2023	19.2	30	Canada Wildfire Smoke
Red Lake Nation	270072304	6/19/2023	17.6	22.4	Canada Wildfire Smoke
Virginia	271377001	6/19/2023	22.2	26.2	Canada Wildfire Smoke
West Duluth	271377554	6/19/2023	27.7	32.6	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 19, 2023.



MODIS visible satellite for June 19, 2023.



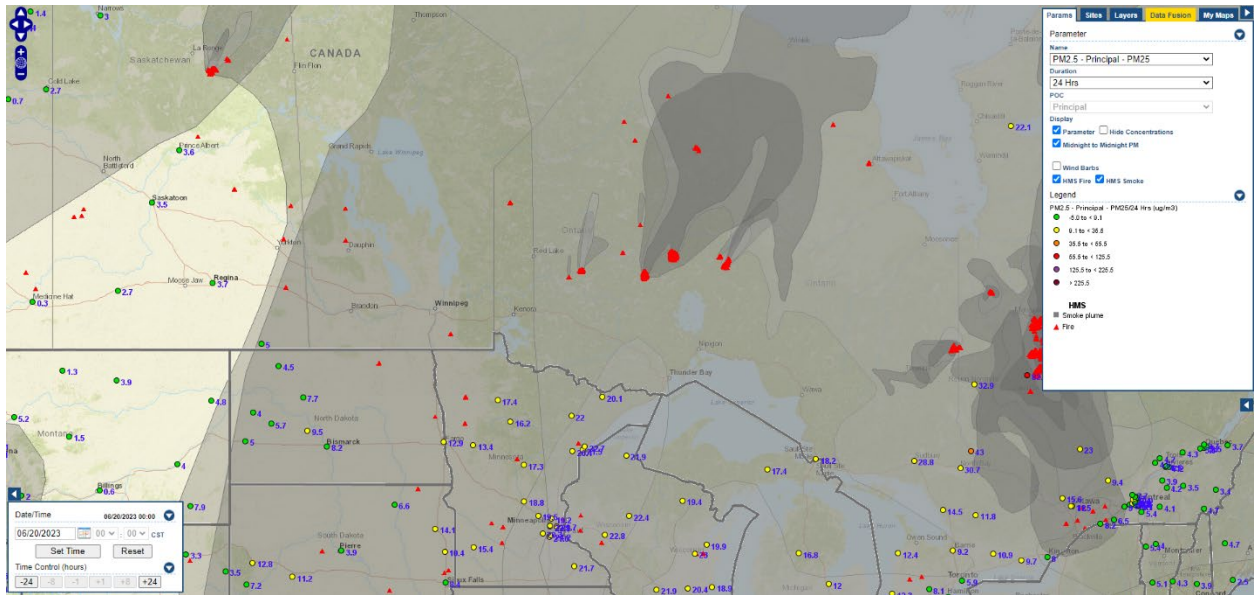
Backward trajectories for June 19, 2023.

6/20/2023 Impacts

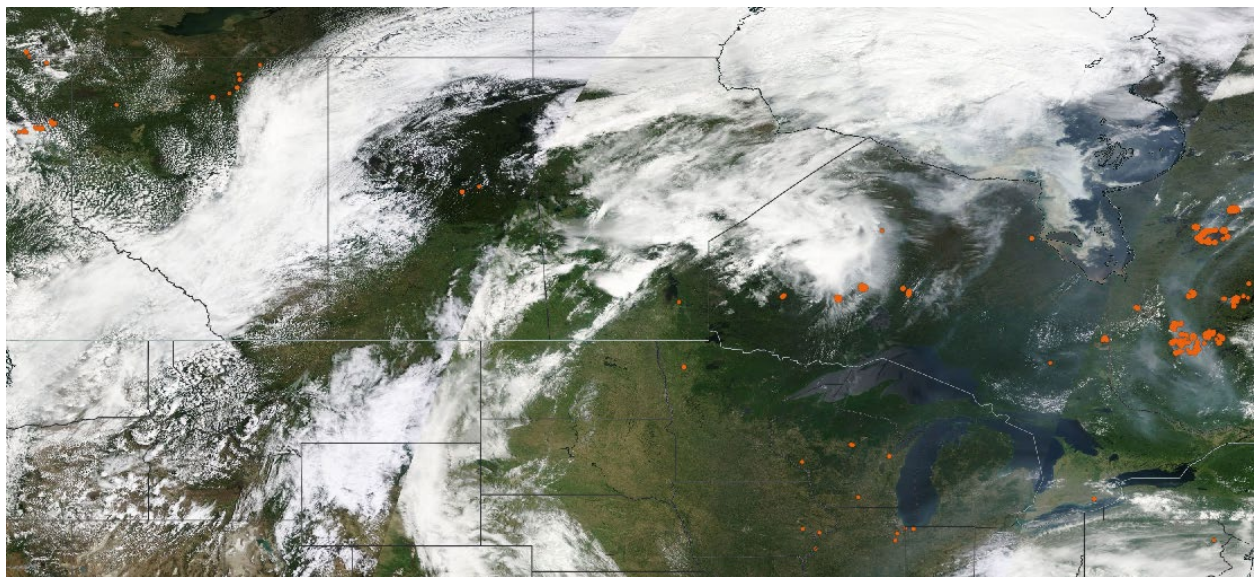
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 20, 2023.

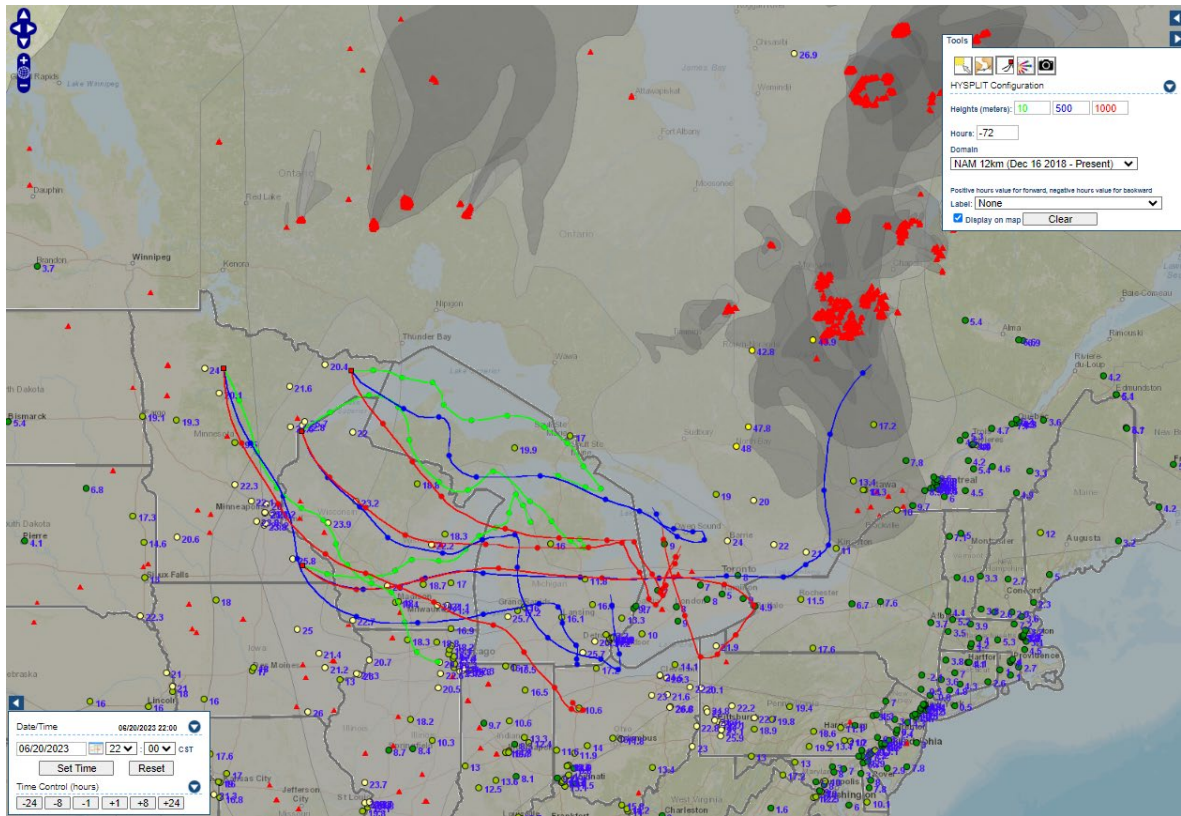
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	6/20/2023	24.3	29.4	Canada Wildfire Smoke
Blaine	270031002	6/20/2023	19.2	59	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/20/2023	22.7	27.1	Canada Wildfire Smoke
Ely	270750005	6/20/2023	20.2	22.6	Canada Wildfire Smoke
Fond du Lac	270177417	6/20/2023	20.4	24.6	Canada Wildfire Smoke
Grand Portage	270317810	6/20/2023	15.8	21	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/20/2023	21.7	26.3	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/20/2023	22.8	26.7	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/20/2023	22.4	26.1	Canada Wildfire Smoke
Red Lake Nation	270072304	6/20/2023	17.5	24	Canada Wildfire Smoke
Rochester	271095008	6/20/2023	21.8	26.1	Canada Wildfire Smoke
Shakopee	271390505	6/20/2023	20.4	25.4	Canada Wildfire Smoke
St. Cloud	271453052	6/20/2023	18.8	24.5	Canada Wildfire Smoke
St. Michael	271713201	6/20/2023	19.5	25.3	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/20/2023	21.8	26.1	Canada Wildfire Smoke
Virginia	271377001	6/20/2023	22.0	24.1	Canada Wildfire Smoke
West Duluth	271377554	6/20/2023	21.6	28.6	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 20, 2023.



MODIS visible satellite for June 20, 2023.



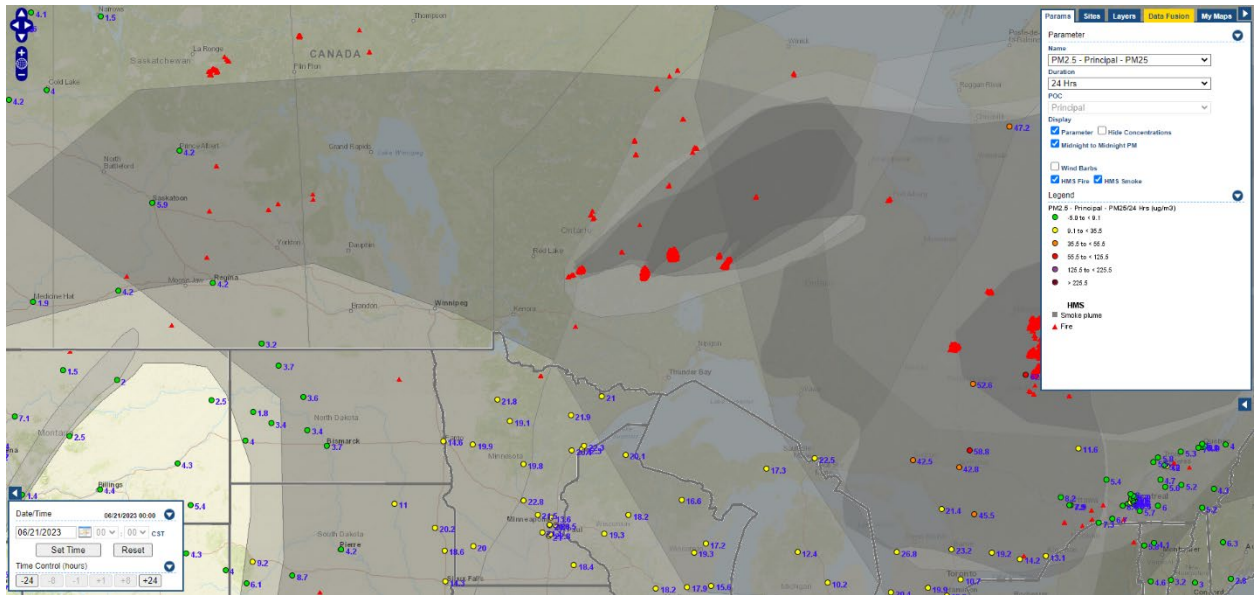
Backward trajectories for June 20, 2023.

6/21/2023 Impacts

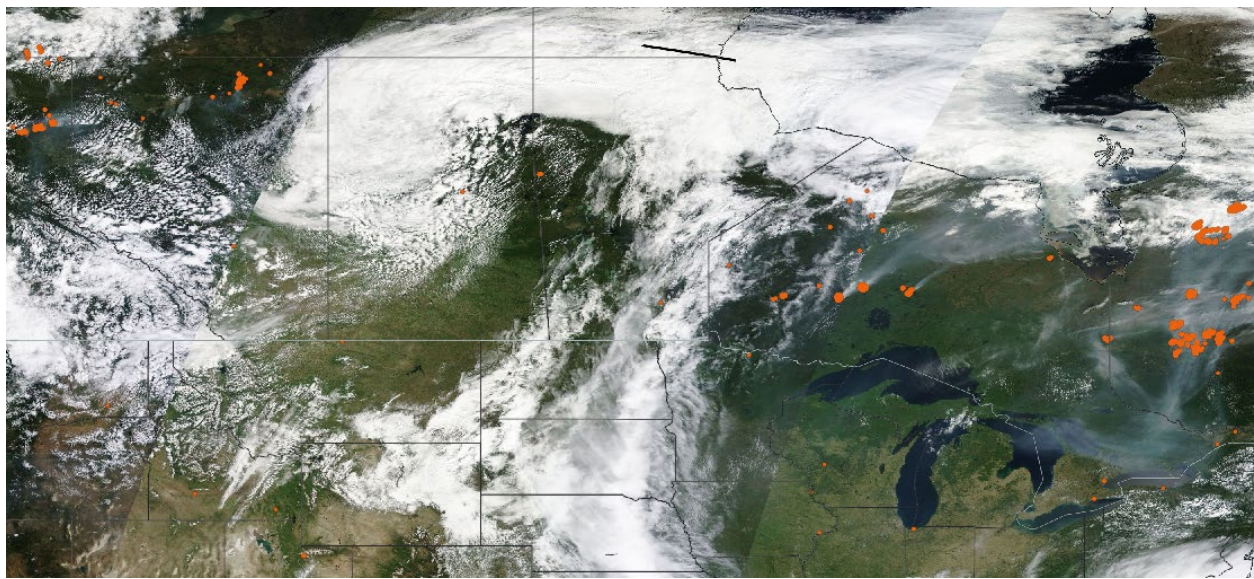
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 21, 2023.

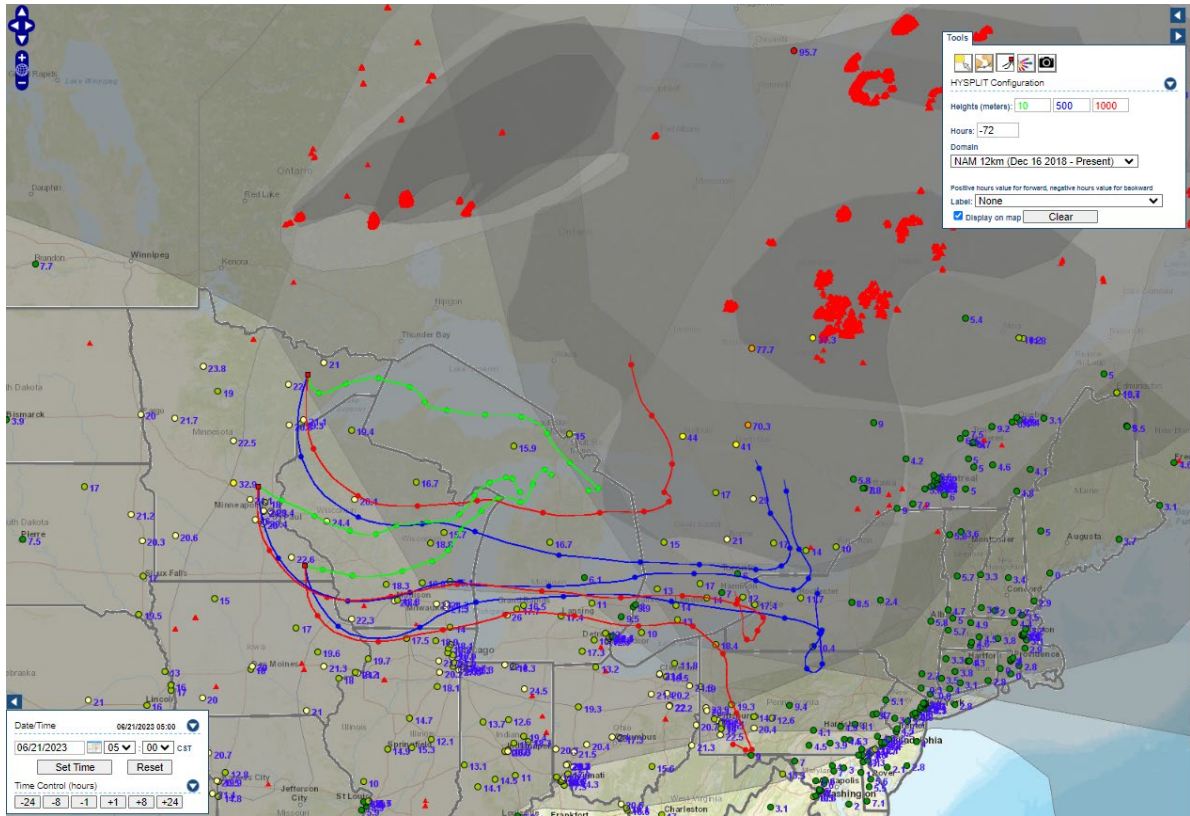
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	6/21/2023	22.9	29.4	Canada Wildfire Smoke
Brainerd	270353204	6/21/2023	19.8	22.7	Canada Wildfire Smoke
Detroit Lakes	270052013	6/21/2023	20.0	22.6	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/21/2023	22.3	28.7	Canada Wildfire Smoke
Ely	270750005	6/21/2023	21.1	23.7	Canada Wildfire Smoke
Fond du Lac	270177417	6/21/2023	20.4	21.7	Canada Wildfire Smoke
Grand Portage	270317810	6/21/2023	15.9	22	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/21/2023	21.1	27.7	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/21/2023	19.2	22.1	Canada Wildfire Smoke
Marshall	270834210	6/21/2023	20.0	22.3	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/21/2023	21.5	25.1	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/21/2023	20.8	24.6	Canada Wildfire Smoke
Red Lake Nation	270072304	6/21/2023	21.9	23.8	Canada Wildfire Smoke
Rochester	271095008	6/21/2023	18.5	24.1	Canada Wildfire Smoke
Shakopee	271390505	6/21/2023	21.5	26.4	Canada Wildfire Smoke
St. Cloud	271453052	6/21/2023	22.9	32.9	Canada Wildfire Smoke
St. Michael	271713201	6/21/2023	21.6	24.5	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/21/2023	20.6	25	Canada Wildfire Smoke
Virginia	271377001	6/21/2023	22.0	24.3	Canada Wildfire Smoke
West Duluth	271377554	6/21/2023	22.4	25.8	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 21, 2023.



MODIS visible satellite for June 21, 2023.



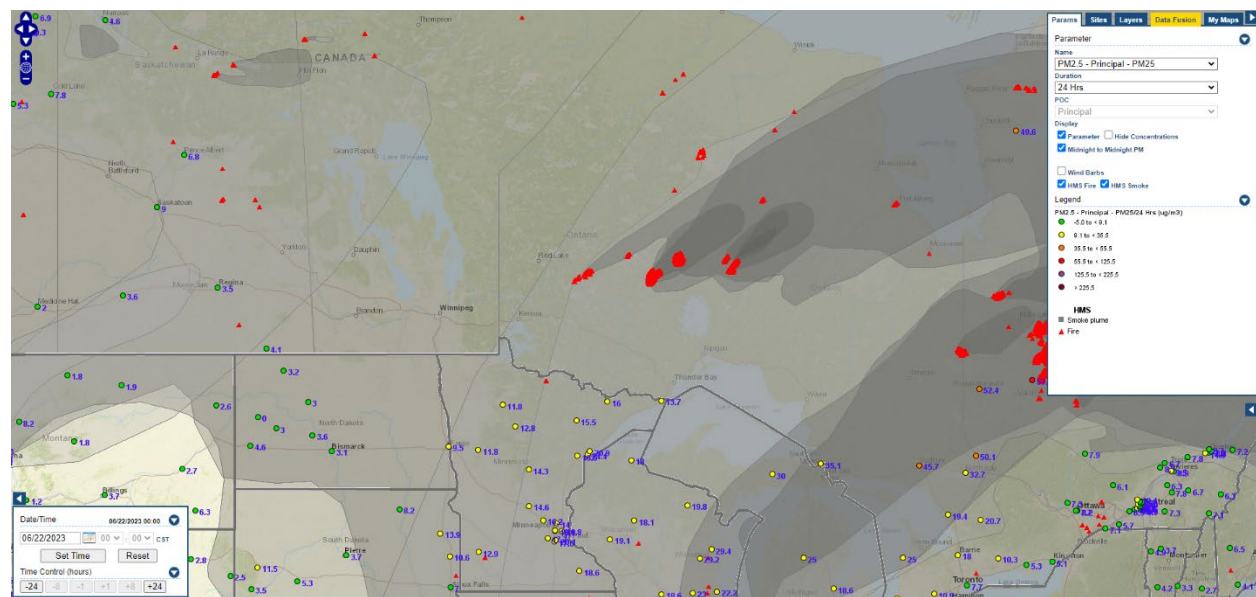
Backward trajectories for June 21, 2023.

6/22/2023 Impacts

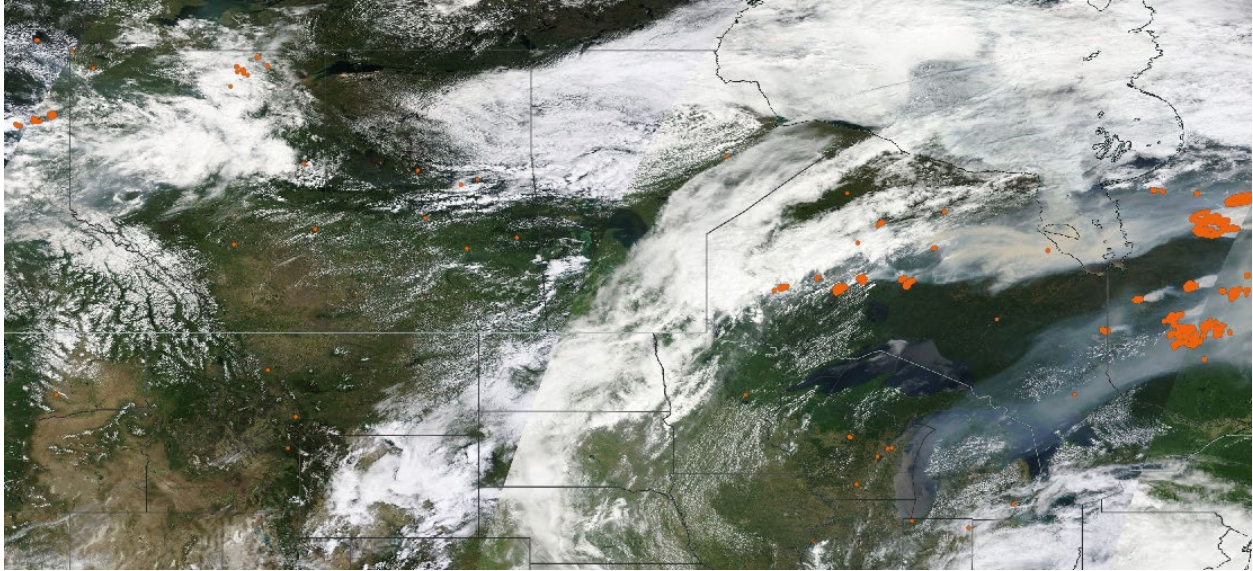
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 22, 2023.

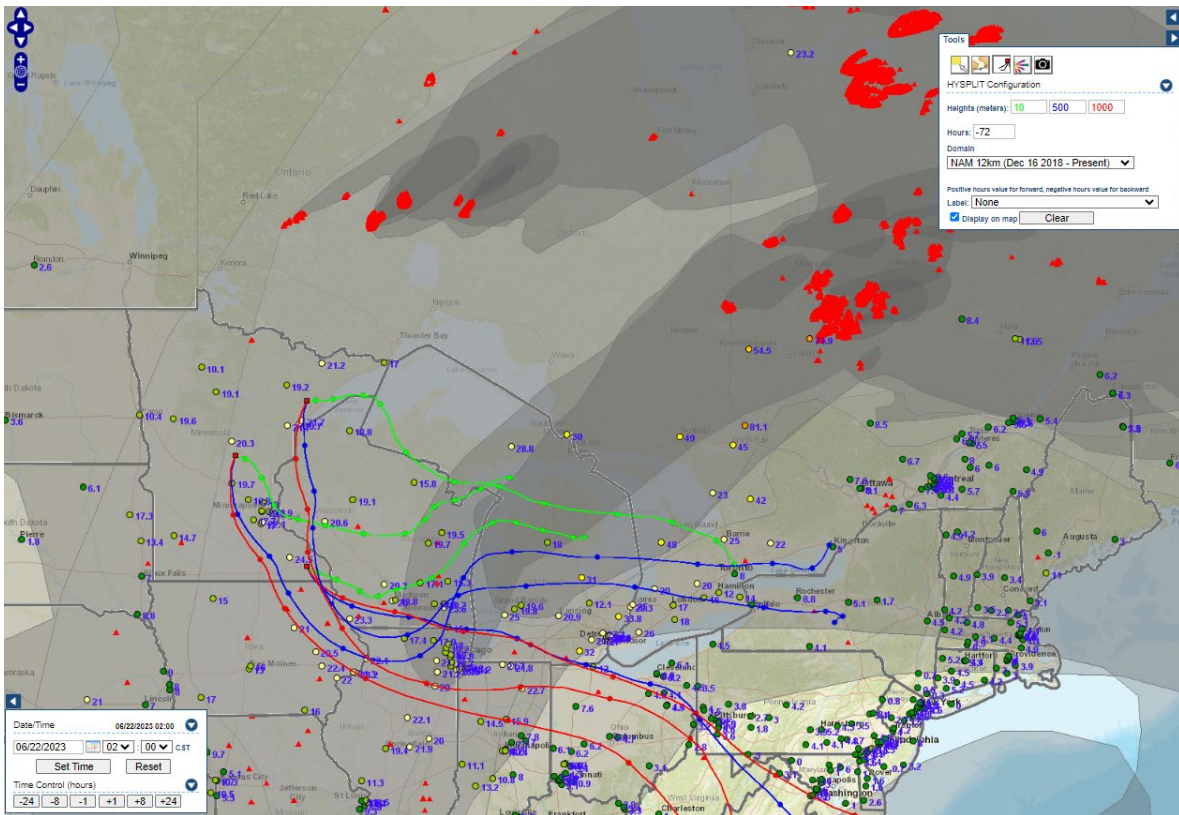
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	6/22/2023	20.1	22.2	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/22/2023	21.0	25.2	Canada Wildfire Smoke
Ely	270750005	6/22/2023	16.1	21.6	Canada Wildfire Smoke
Fond du Lac	270177417	6/22/2023	16.6	22.6	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/22/2023	19.2	26.4	Canada Wildfire Smoke
Rochester	271095008	6/22/2023	18.7	24.5	Canada Wildfire Smoke
West Duluth	271377554	6/22/2023	24.5	28.2	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 22, 2023.



MODIS visible satellite for June 22, 2023.



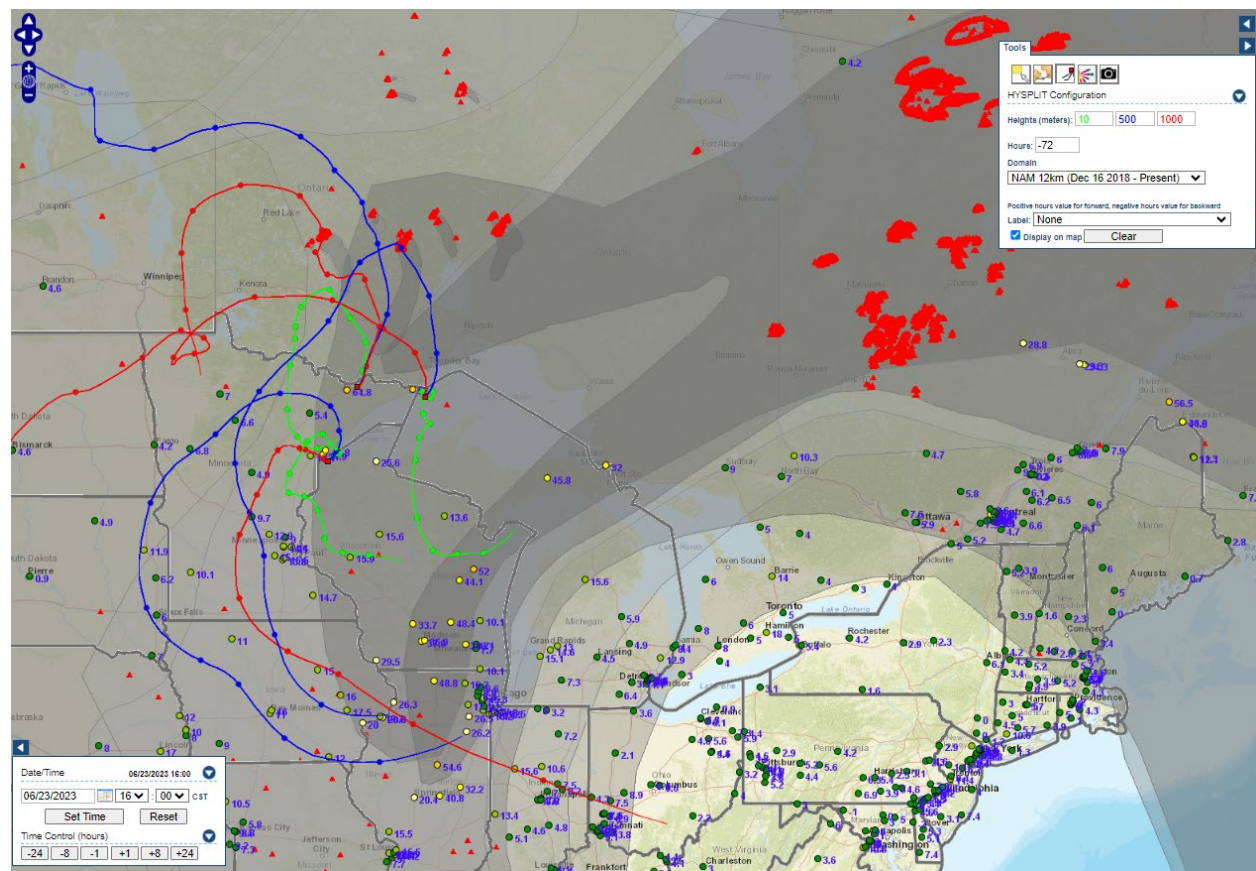
Backward trajectories for June 22, 2023.

6/23/2023 Impacts

Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 23, 2023.

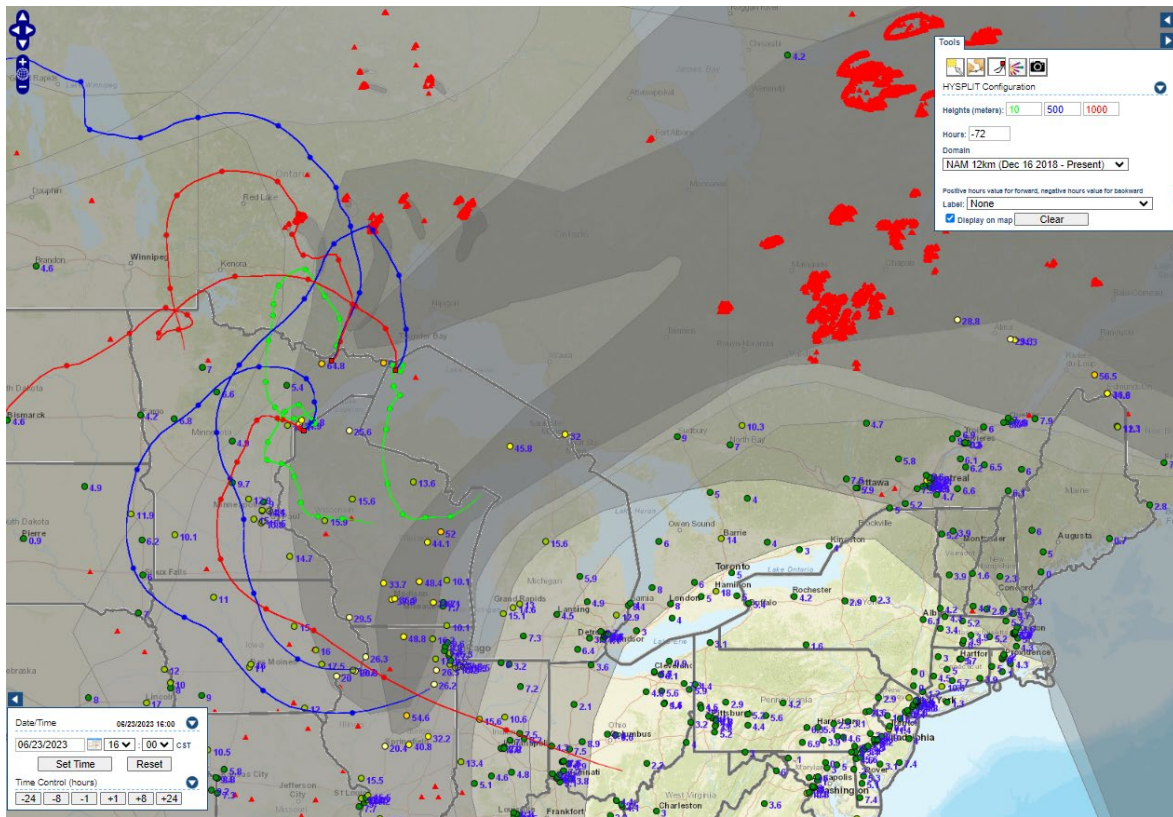
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Duluth-WDSE	271377550	6/23/2023	22.3	49.8	Canada Wildfire Smoke
Ely	270750005	6/23/2023	27.7	76.2	Canada Wildfire Smoke
Grand Portage	270317810	6/23/2023	32.8	66	Canada Wildfire Smoke
Rochester	271095008	6/23/2023	17.8	22.5	Canada Wildfire Smoke
West Duluth	271377554	6/23/2023	25.1	49	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 23, 2023.



MODIS visible satellite for June 23, 2023.



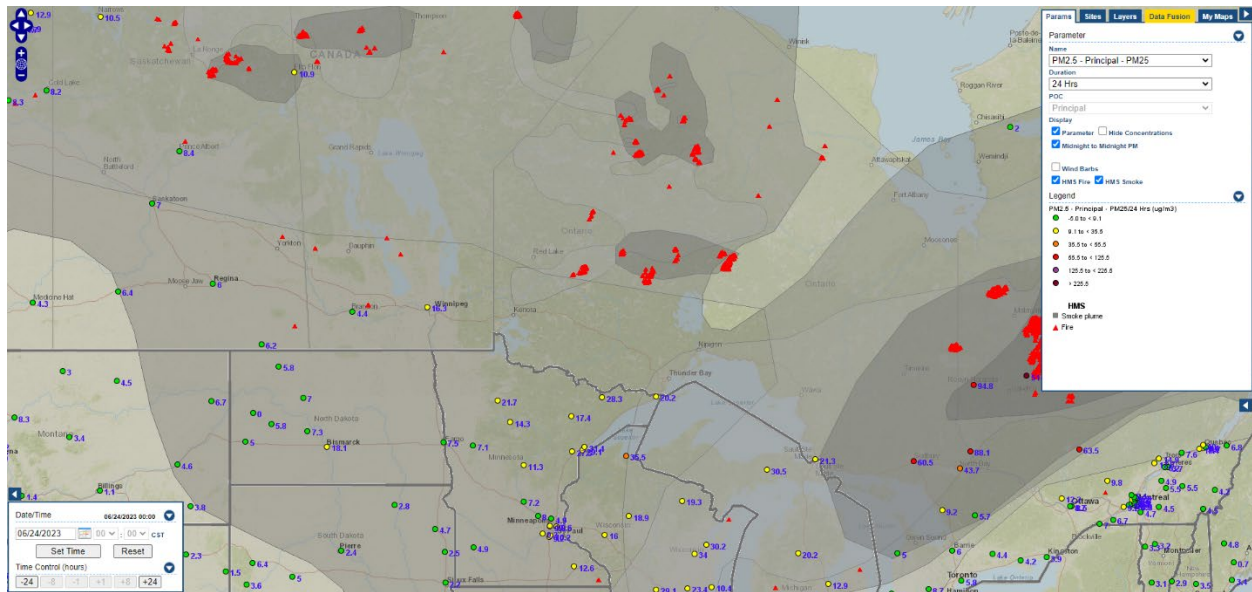
Backward trajectories for June 23, 2023.

6/24/2023 Impacts

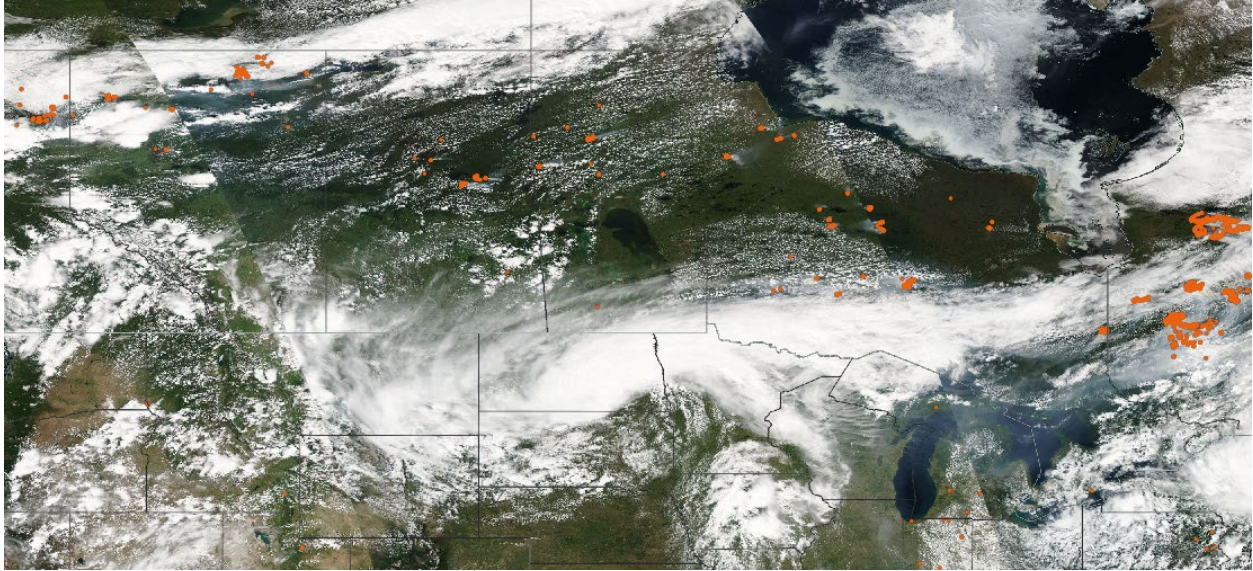
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 24, 2023.

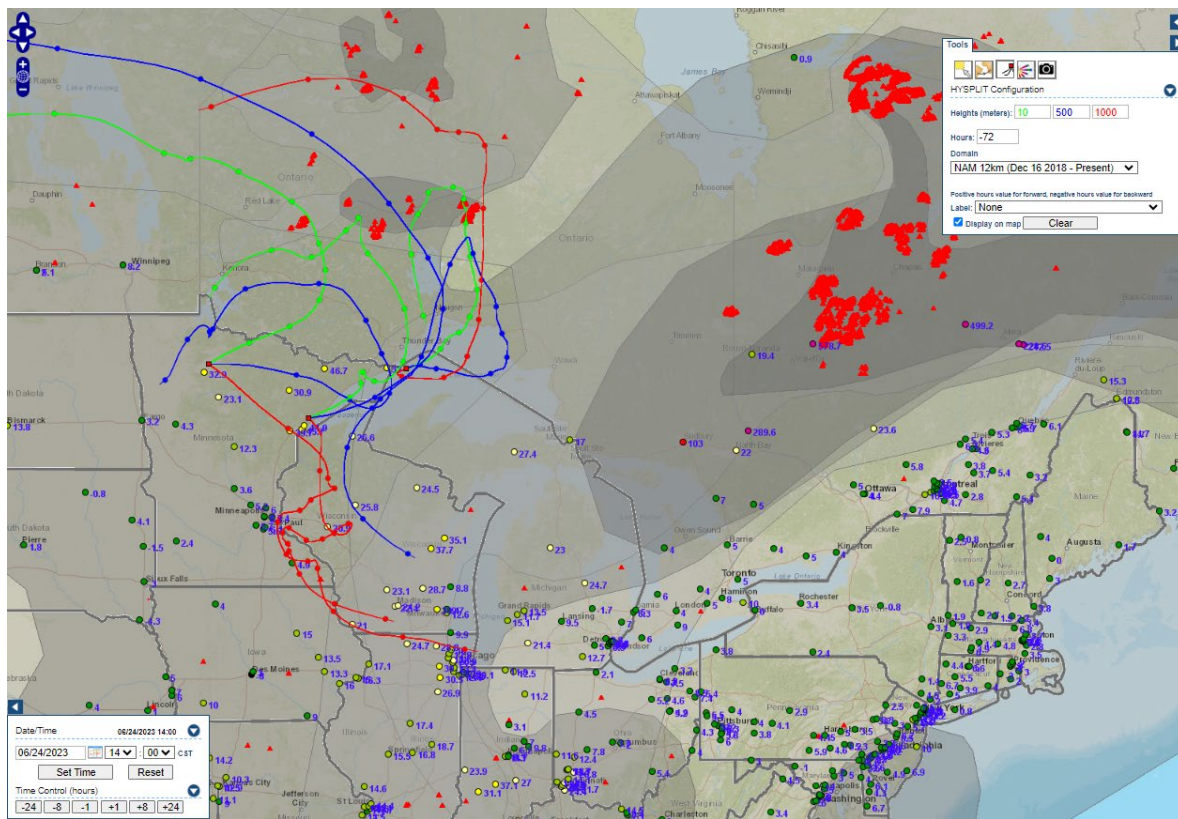
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Duluth-WDSE	271377550	6/24/2023	31.5	62.9	Canada Wildfire Smoke
Ely	270750005	6/24/2023	28.4	46.7	Canada Wildfire Smoke
Fond du Lac	270177417	6/24/2023	27.5	42.8	Canada Wildfire Smoke
Grand Portage	270317810	6/24/2023	20.3	48	Canada Wildfire Smoke
Red Lake Nation	270072304	6/24/2023	21.8	33.7	Canada Wildfire Smoke
West Duluth	271377554	6/24/2023	29.1	63.1	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 24, 2023.



MODIS visible satellite for June 24, 2023.



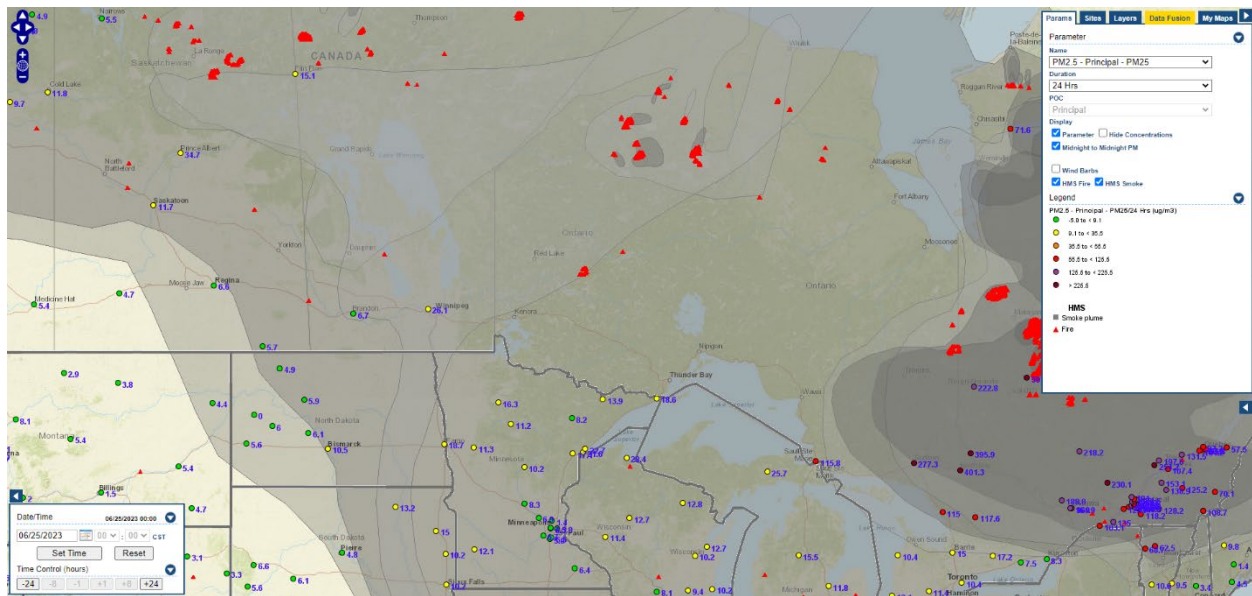
Backward trajectories for June 24, 2023.

6/25/2023 Impacts

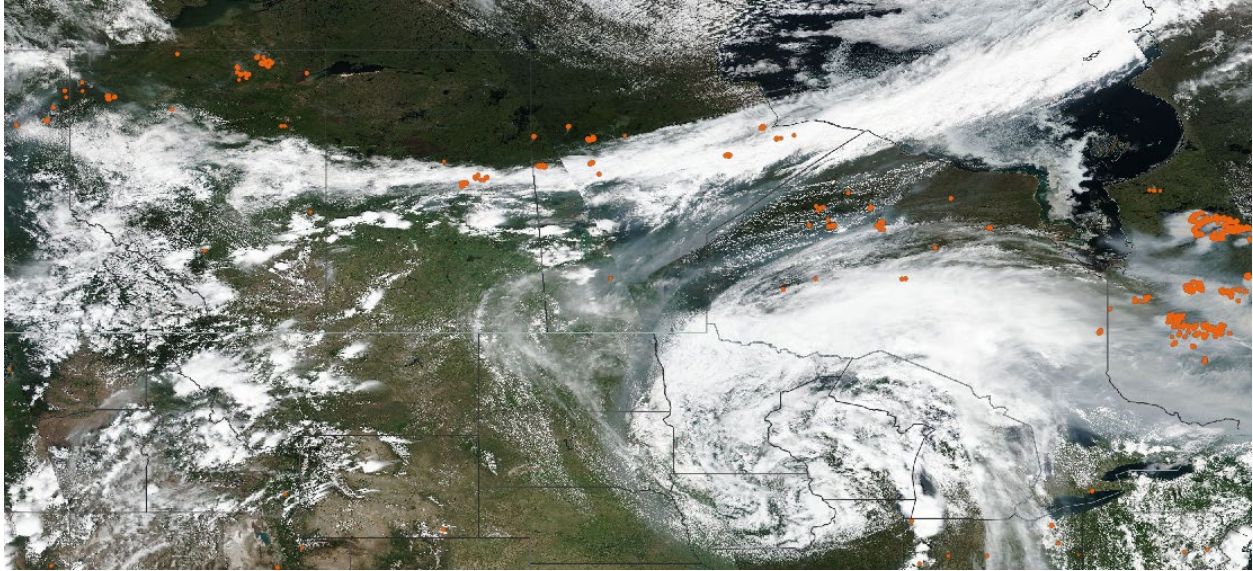
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 25, 2023.

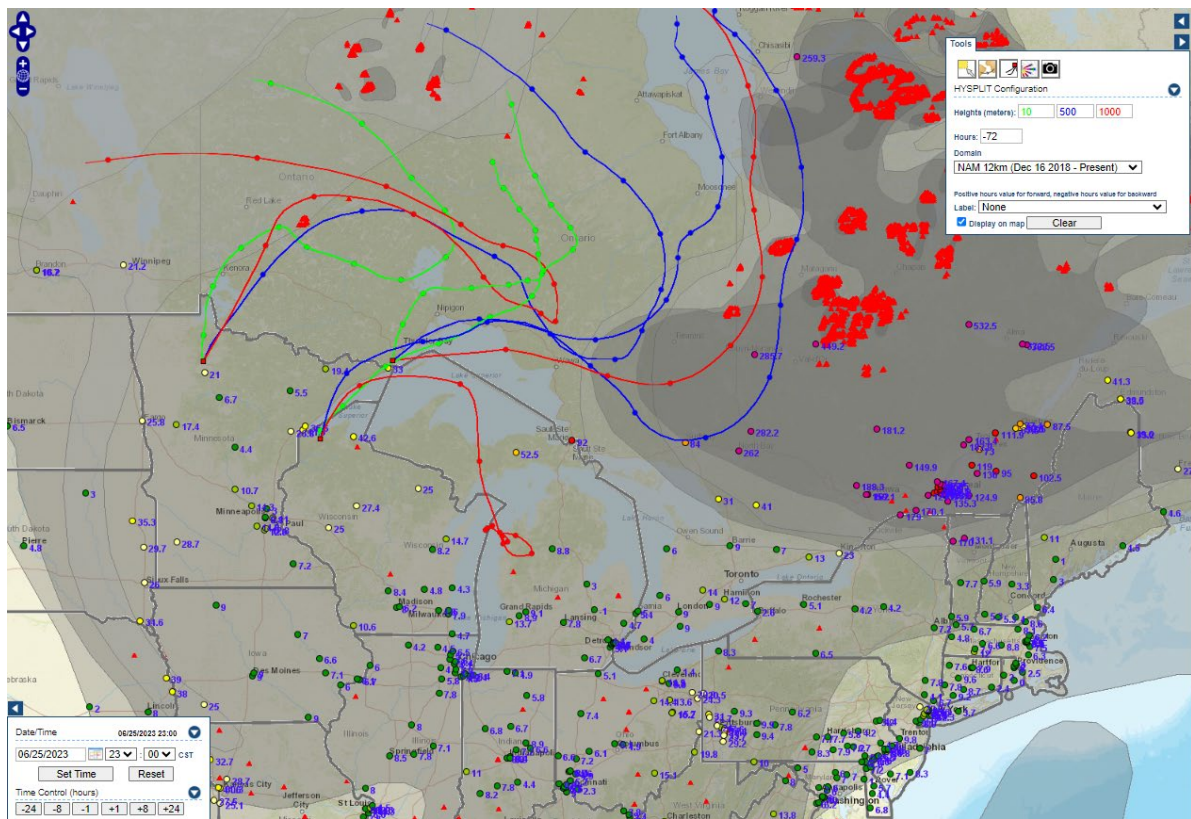
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Duluth-WDSE	271377550	6/25/2023	22.8	48.6	Canada Wildfire Smoke
Fond du Lac	270177417	6/25/2023	17.2	29.1	Canada Wildfire Smoke
Grand Portage	270317810	6/25/2023	18.6	36	Canada Wildfire Smoke
Red Lake Nation	270072304	6/25/2023	16.3	23.3	Canada Wildfire Smoke
West Duluth	271377554	6/25/2023	21.7	44.8	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 25, 2023.



MODIS visible satellite for June 25, 2023.



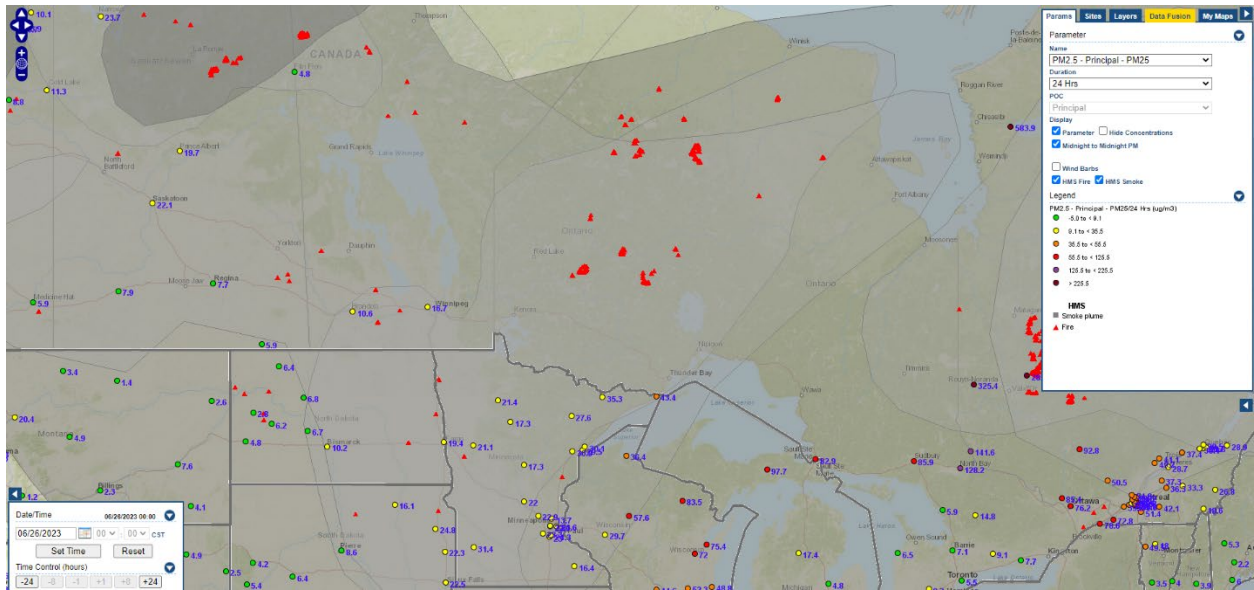
Backward trajectories for June 25, 2023.

6/26/2023 Impacts

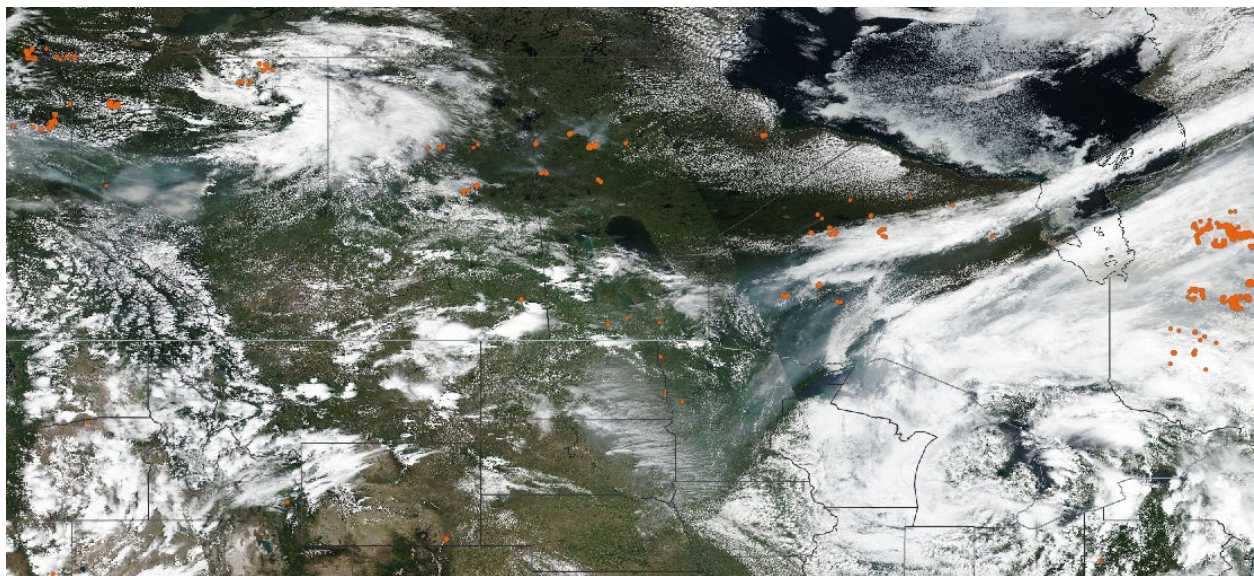
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 26, 2023.

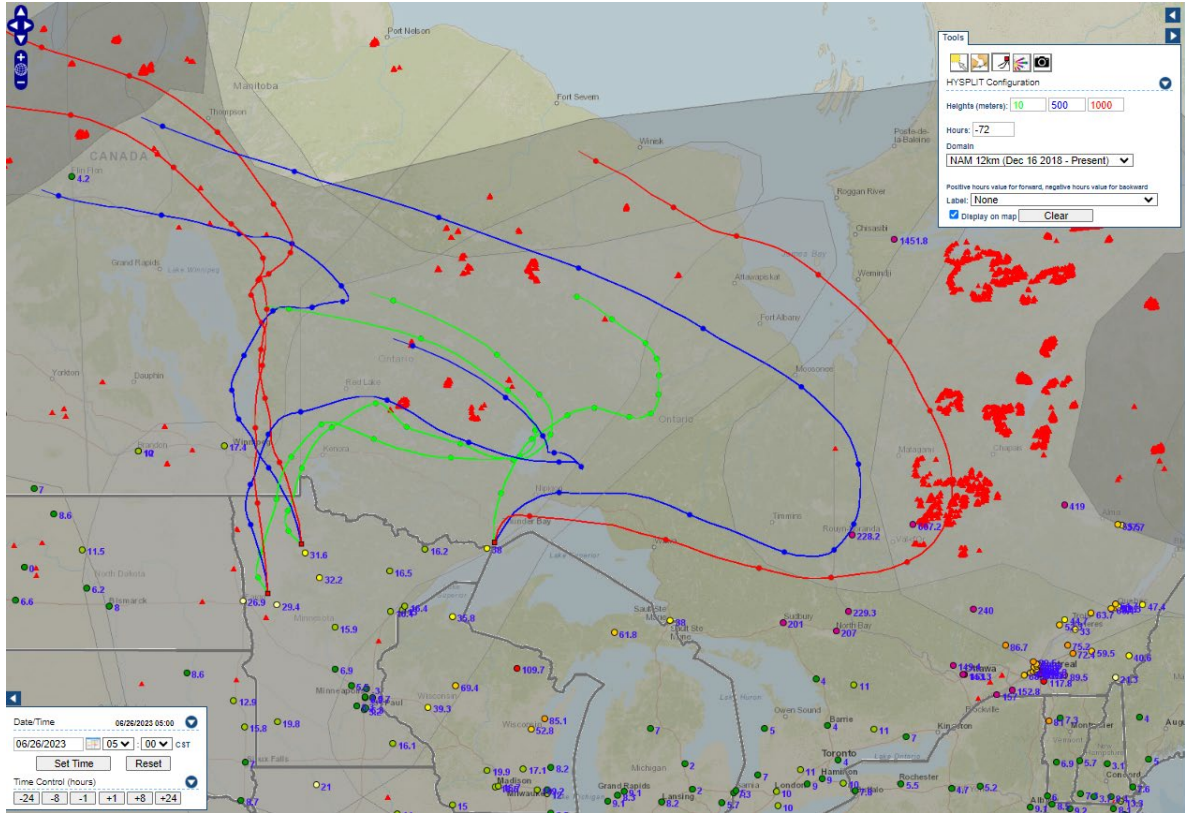
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	6/26/2023	24.4	52.5	Canada Wildfire Smoke
Detroit Lakes	270052013	6/26/2023	21.1	34	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/26/2023	30.2	69.9	Canada Wildfire Smoke
Ely	270750005	6/26/2023	35.3	58.4	Canada Wildfire Smoke
Fargo NW	380171004	6/26/2023	19.5	29.5	Canada Wildfire Smoke
Fond du Lac	270177417	6/26/2023	31.0	53	Canada Wildfire Smoke
Grand Portage	270317810	6/26/2023	43.4	94	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/26/2023	23.0	47.8	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/26/2023	17.4	32.4	Canada Wildfire Smoke
Marshall	270834210	6/26/2023	31.5	40.5	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/26/2023	23.0	49.2	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/26/2023	23.6	48.9	Canada Wildfire Smoke
Red Lake Nation	270072304	6/26/2023	21.4	48.4	Canada Wildfire Smoke
Shakopee	271390505	6/26/2023	23.3	50.1	Canada Wildfire Smoke
St. Cloud	271453052	6/26/2023	22.1	42.9	Canada Wildfire Smoke
St. Michael	271713201	6/26/2023	22.9	53.2	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/26/2023	24.7	48	Canada Wildfire Smoke
Virginia	271377001	6/26/2023	27.7	47.7	Canada Wildfire Smoke
West Duluth	271377554	6/26/2023	29.5	54.8	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 26, 2023.



MODIS visible satellite for June 26, 2023.



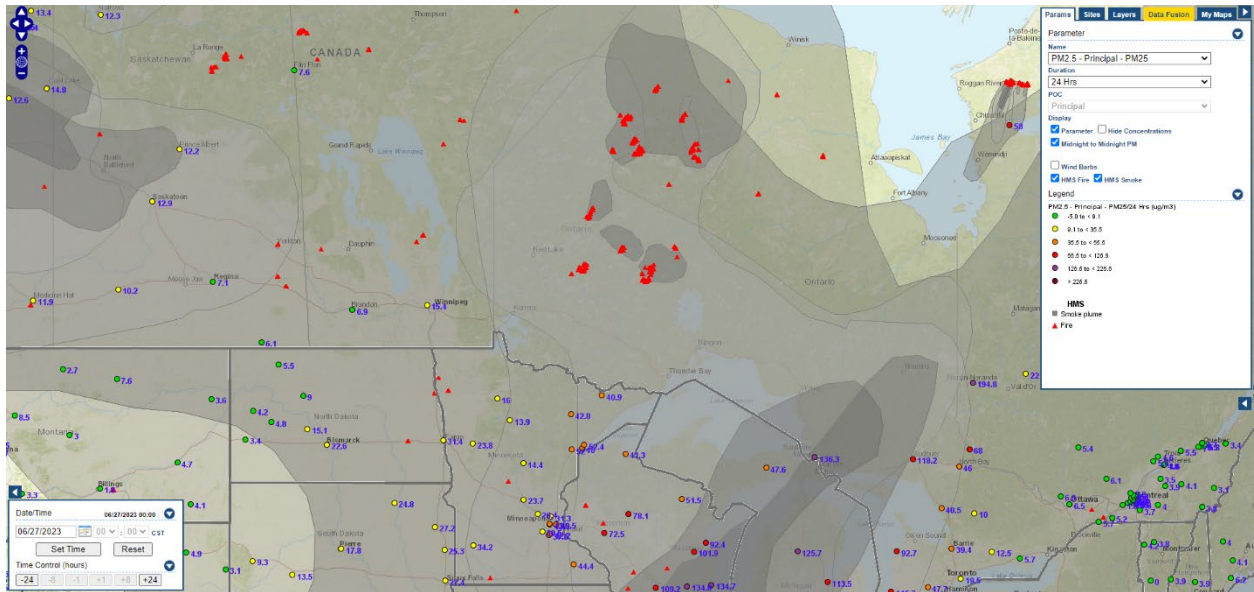
Backward trajectories for June 26, 2023.

6/27/2023 Impacts

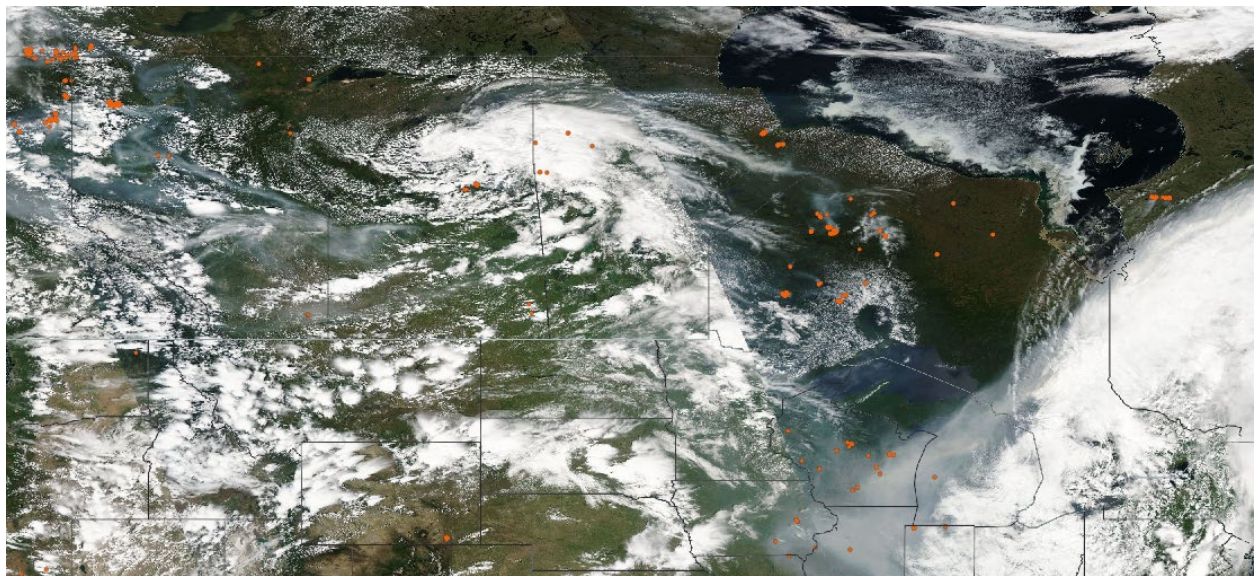
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 27, 2023.

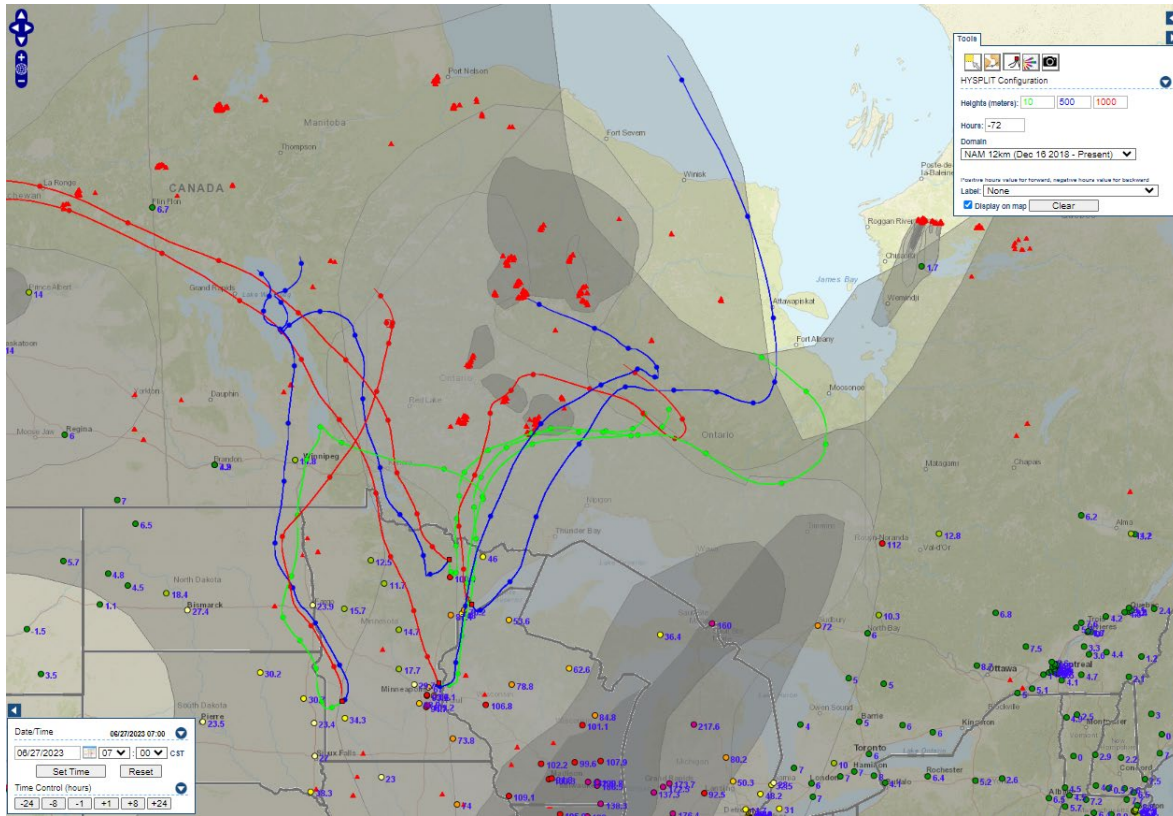
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	6/27/2023	42.3	105.2	Canada Wildfire Smoke
Blaine	270031002	6/27/2023	31.3	77	Canada Wildfire Smoke
Detroit Lakes	270052013	6/27/2023	23.8	38.8	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/27/2023	52.5	98	Canada Wildfire Smoke
Ely	270750005	6/27/2023	41.0	72.1	Canada Wildfire Smoke
Fargo NW	380171004	6/27/2023	31.5	45.1	Canada Wildfire Smoke
Fond du Lac	270177417	6/27/2023	52.0	87.4	Canada Wildfire Smoke
Grand Portage	270317810	6/27/2023	31.5	34	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/27/2023	37.5	94.7	Canada Wildfire Smoke
Marshall	270834210	6/27/2023	34.3	43.7	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/27/2023	43.3	98.1	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/27/2023	43.9	96.4	Canada Wildfire Smoke
Red Lake Nation	270072304	6/27/2023	16.1	30.6	Canada Wildfire Smoke
Rochester	271095008	6/27/2023	44.4	109.4	Canada Wildfire Smoke
Shakopee	271390505	6/27/2023	30.5	68.9	Canada Wildfire Smoke
St. Cloud	271453052	6/27/2023	23.7	41.1	Canada Wildfire Smoke
St. Michael	271713201	6/27/2023	26.4	40.7	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/27/2023	49.6	111.2	Canada Wildfire Smoke
Virginia	271377001	6/27/2023	42.9	100.1	Canada Wildfire Smoke
West Duluth	271377554	6/27/2023	48.1	86.7	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 27, 2023.



MODIS visible satellite for June 27, 2023.



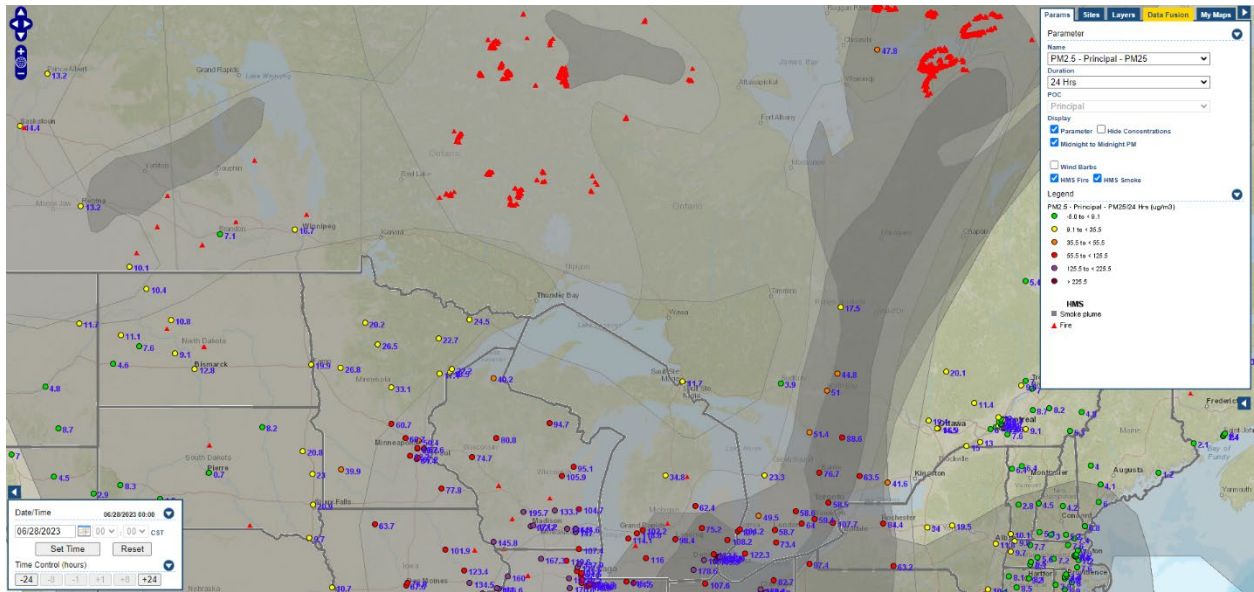
Backward trajectories for June 27, 2023.

6/28/2023 Impacts

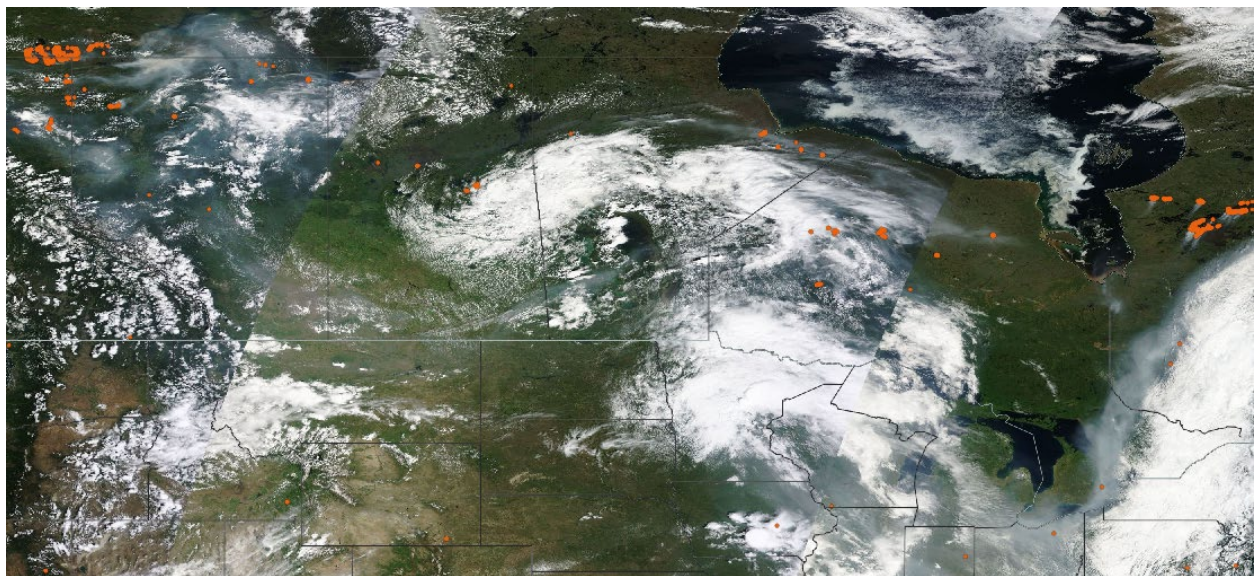
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 28, 2023.

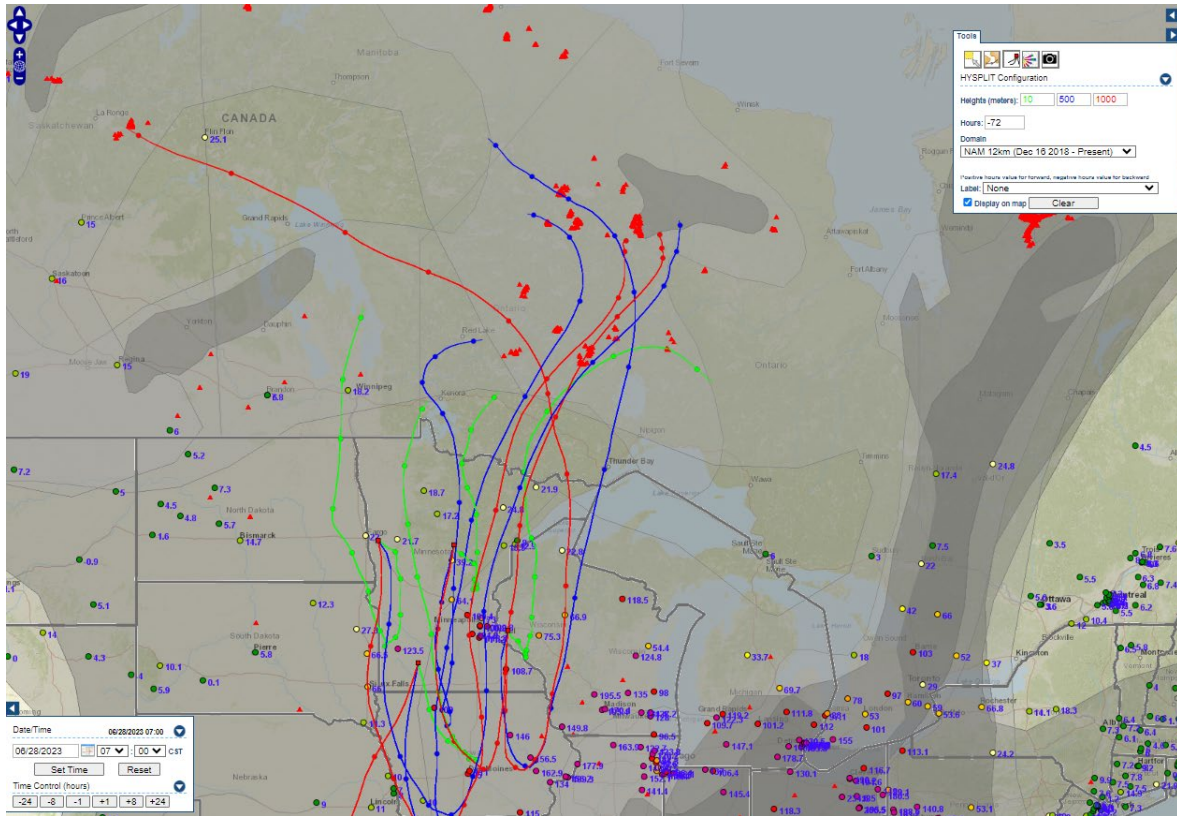
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	6/28/2023	67.3	123.4	Canada Wildfire Smoke
Blaine	270031002	6/28/2023	50.4	80	Canada Wildfire Smoke
Brainerd	270353204	6/28/2023	33.2	39.6	Canada Wildfire Smoke
Detroit Lakes	270052013	6/28/2023	26.8	37	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/28/2023	22.2	39.7	Canada Wildfire Smoke
Ely	270750005	6/28/2023	24.6	34	Canada Wildfire Smoke
Fargo NW	380171004	6/28/2023	20.0	30.6	Canada Wildfire Smoke
Fond du Lac	270177417	6/28/2023	17.5	22.7	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/28/2023	61.4	115.5	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/28/2023	26.5	43.1	Canada Wildfire Smoke
Marshall	270834210	6/28/2023	40.0	123.5	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/28/2023	63.0	106.1	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/28/2023	60.7	102	Canada Wildfire Smoke
Red Lake Nation	270072304	6/28/2023	20.3	44.6	Canada Wildfire Smoke
Rochester	271095008	6/28/2023	77.8	111.8	Canada Wildfire Smoke
Shakopee	271390505	6/28/2023	62.3	113.7	Canada Wildfire Smoke
St. Cloud	271453052	6/28/2023	60.8	96.6	Canada Wildfire Smoke
St. Michael	271713201	6/28/2023	60.8	104.3	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/28/2023	62.7	109.8	Canada Wildfire Smoke
Virginia	271377001	6/28/2023	22.7	29.9	Canada Wildfire Smoke
West Duluth	271377554	6/28/2023	18.5	32	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 28, 2023.



MODIS visible satellite for June 28, 2023.



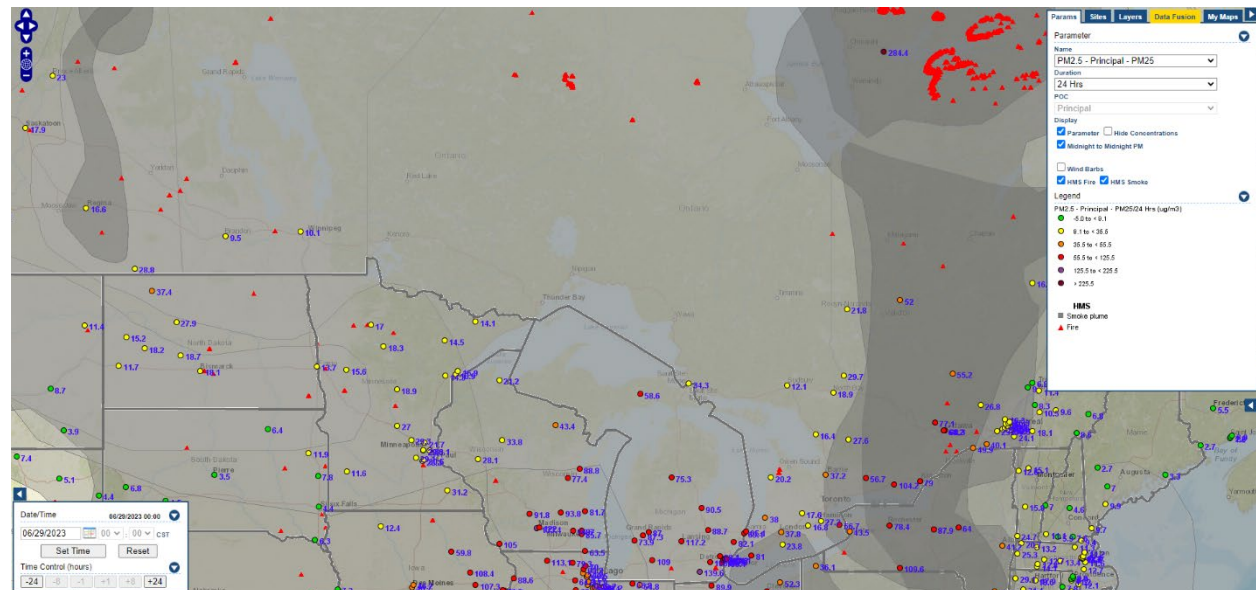
Backward trajectories for June 28, 2023.

6/29/2023 Impacts

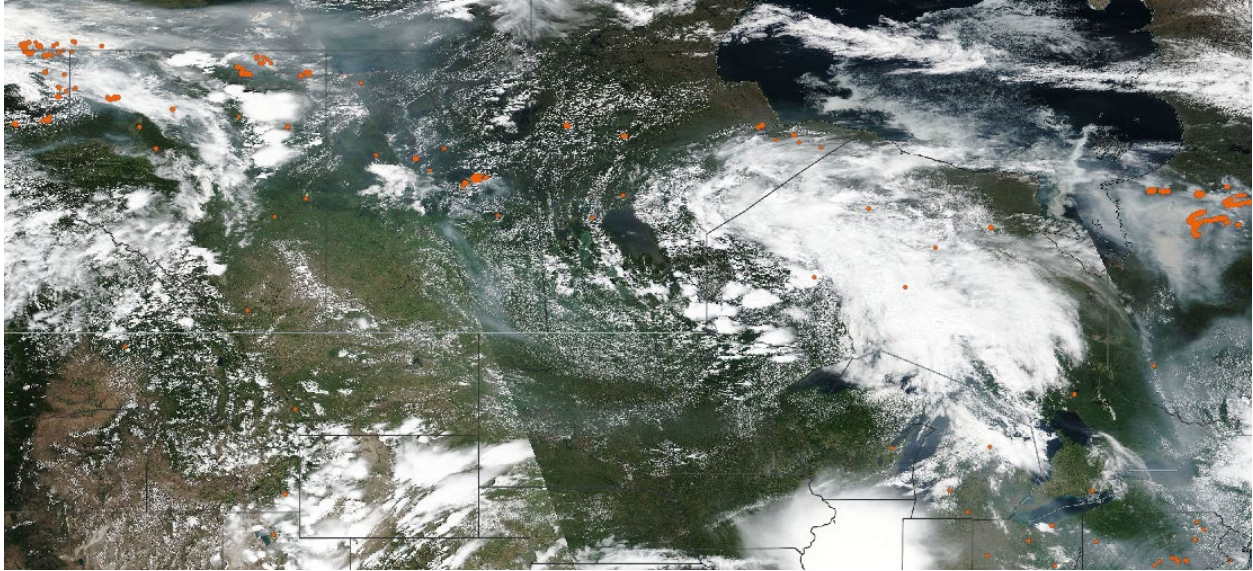
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 29, 2023.

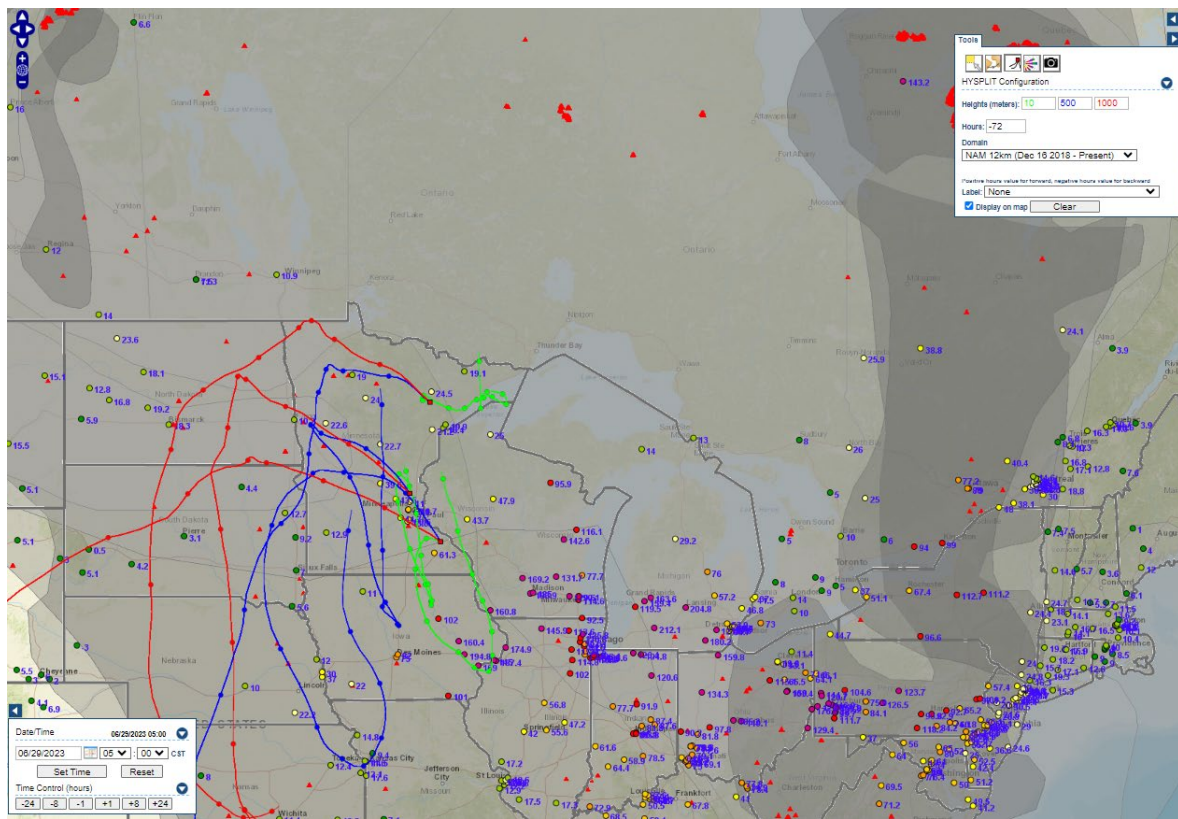
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	6/29/2023	30.5	54.7	Canada Wildfire Smoke
Blaine	270031002	6/29/2023	21.7	42	Canada Wildfire Smoke
Brainerd	270353204	6/29/2023	19.0	32.9	Canada Wildfire Smoke
Duluth-WDSE	271377550	6/29/2023	16.9	24.7	Canada Wildfire Smoke
Grand Portage	270317810	6/29/2023	25.3	37	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/29/2023	26.3	46.9	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/29/2023	18.3	39.5	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	6/29/2023	29.7	54.1	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	6/29/2023	29.7	53.4	Canada Wildfire Smoke
Red Lake Nation	270072304	6/29/2023	17.1	34.7	Canada Wildfire Smoke
Rochester	271095008	6/29/2023	31.2	76.5	Canada Wildfire Smoke
Shakopee	271390505	6/29/2023	29.1	49.1	Canada Wildfire Smoke
St. Cloud	271453052	6/29/2023	27.0	53.4	Canada Wildfire Smoke
St. Michael	271713201	6/29/2023	29.4	55.2	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/29/2023	30.2	57.5	Canada Wildfire Smoke
West Duluth	271377554	6/29/2023	16.9	32.9	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 29, 2023.



MODIS visible satellite for June 29, 2023.



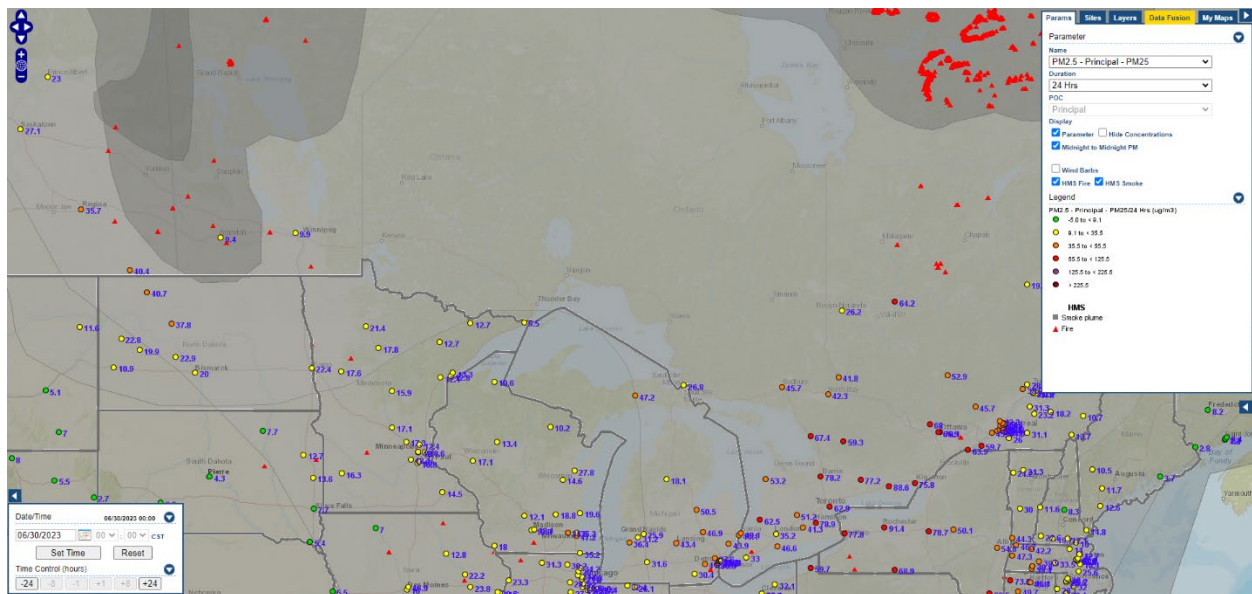
Backward trajectories for June 29, 2023.

6/30/2023 Impacts

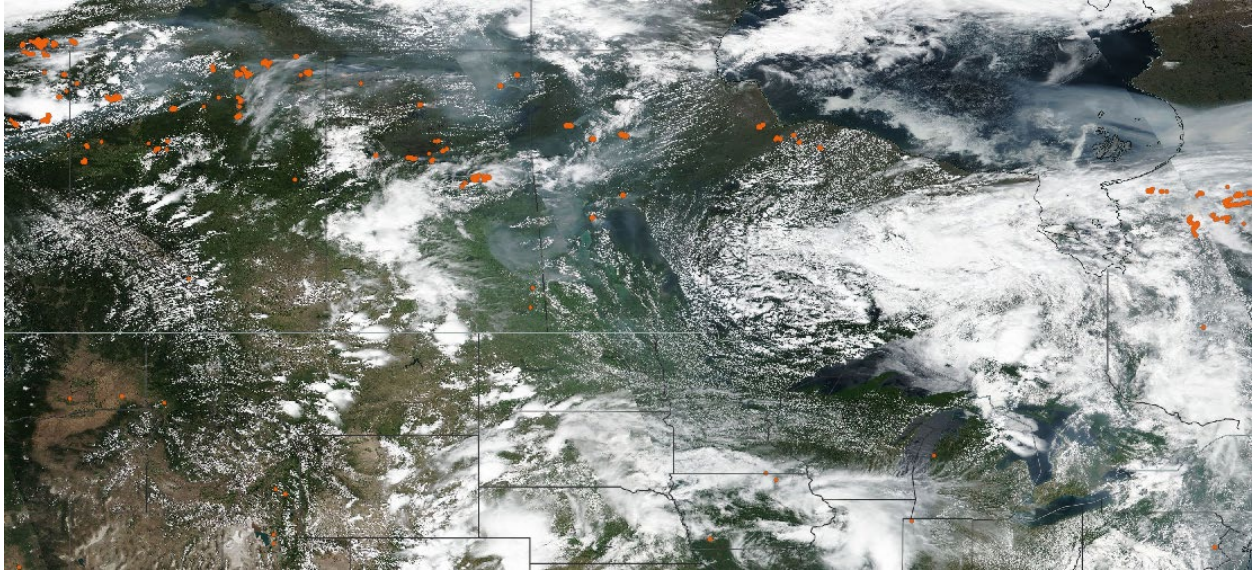
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on June 30, 2023.

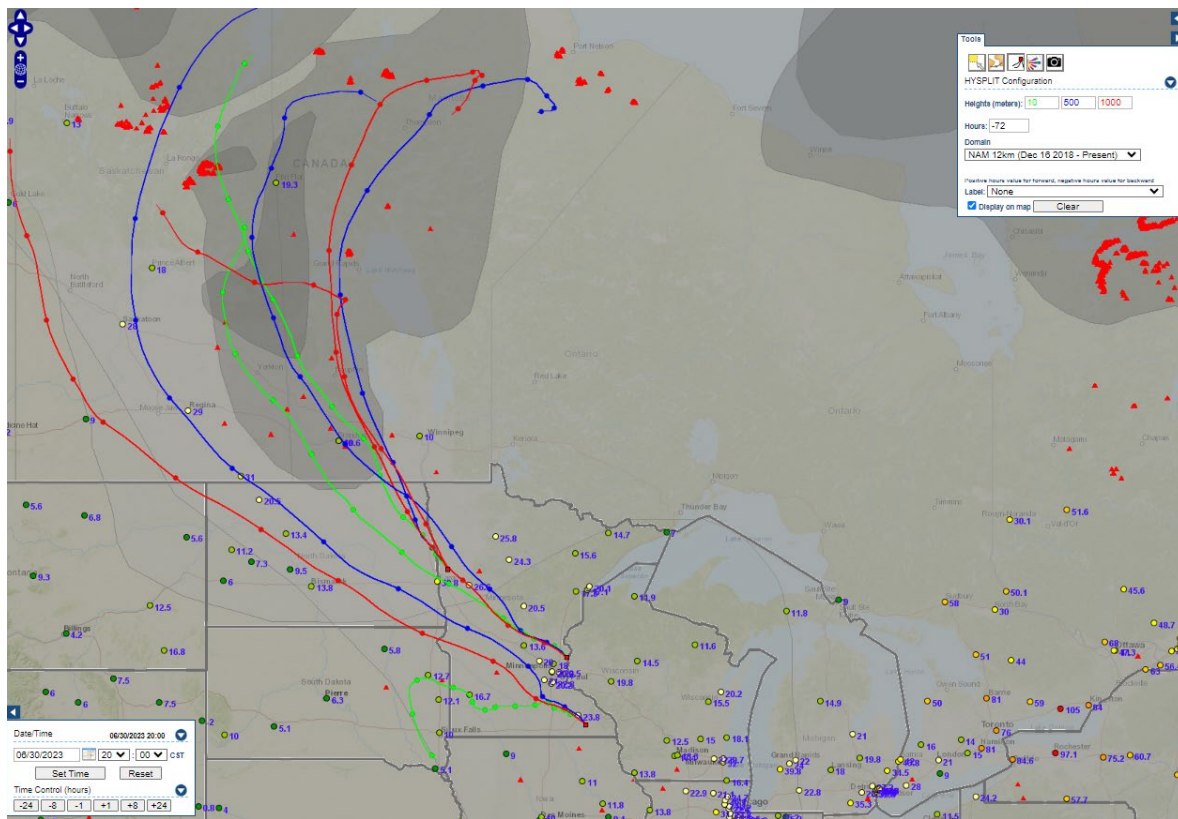
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	6/30/2023	19.1	24.9	Canada Wildfire Smoke
Fargo NW	380171004	6/30/2023	22.5	35.8	Canada Wildfire Smoke
Lakeville - Near Road	270370480	6/30/2023	16.8	22.3	Canada Wildfire Smoke
Leech Lake Nation	270213410	6/30/2023	17.8	24.3	Canada Wildfire Smoke
Red Lake Nation	270072304	6/30/2023	21.5	29	Canada Wildfire Smoke
Shakopee	271390505	6/30/2023	18.4	26.5	Canada Wildfire Smoke
St. Michael	271713201	6/30/2023	17.3	21.5	Canada Wildfire Smoke
St. Paul-Harding	271230871	6/30/2023	18.7	28.4	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on June 30, 2023.



MODIS visible satellite for June 30, 2023.



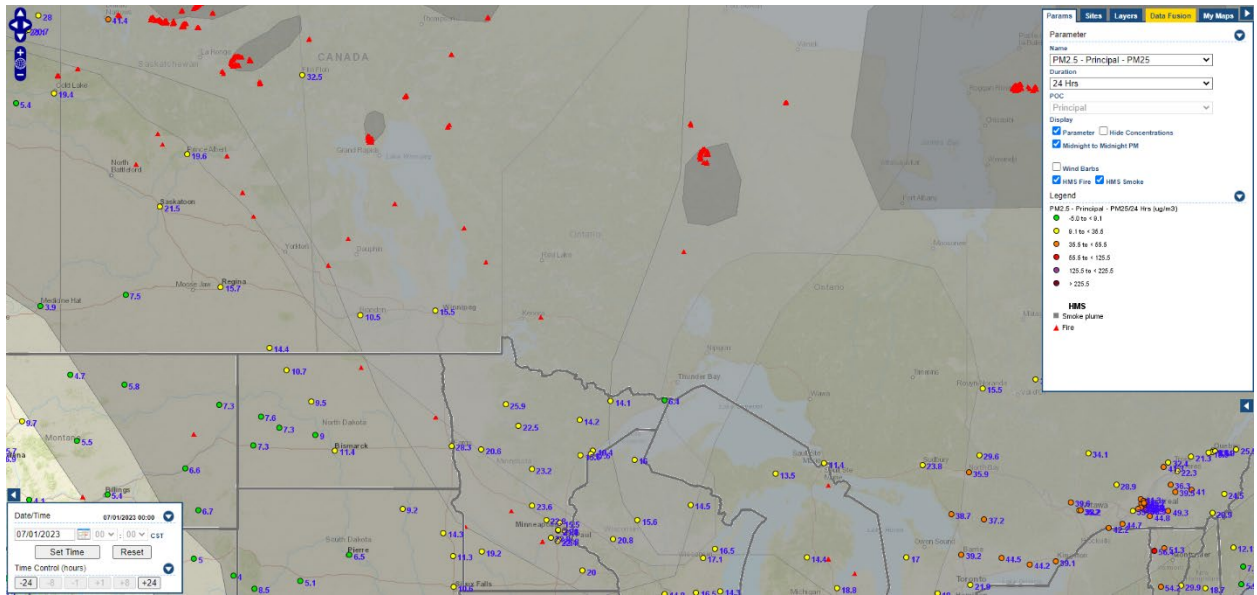
Backward trajectories for June 30, 2023.

7/1/2023 Impacts

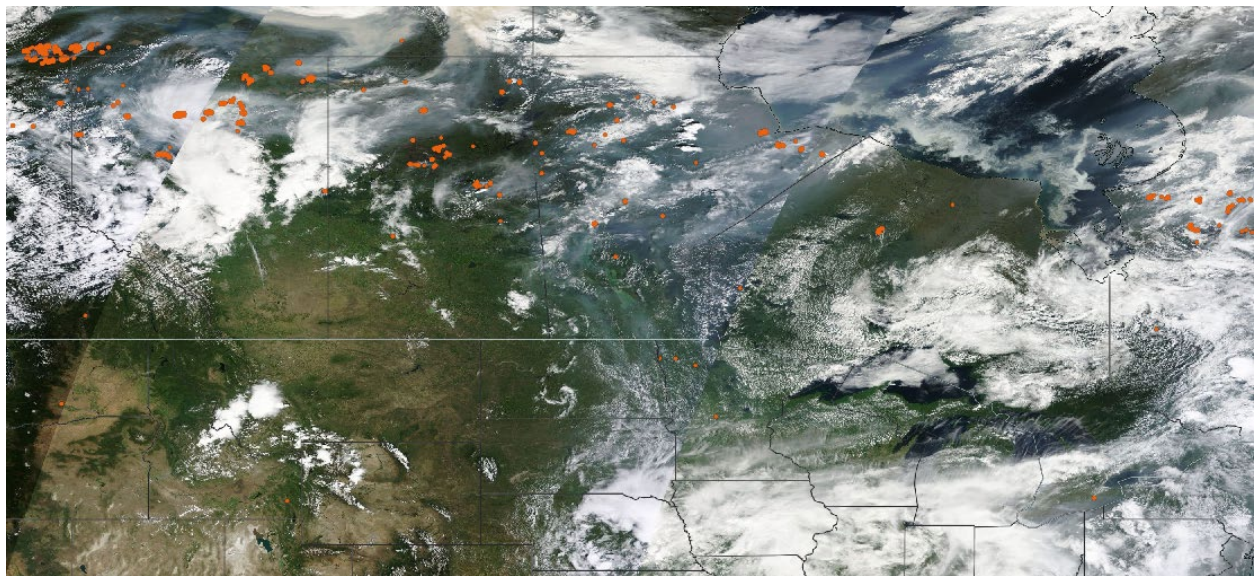
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 1, 2023.

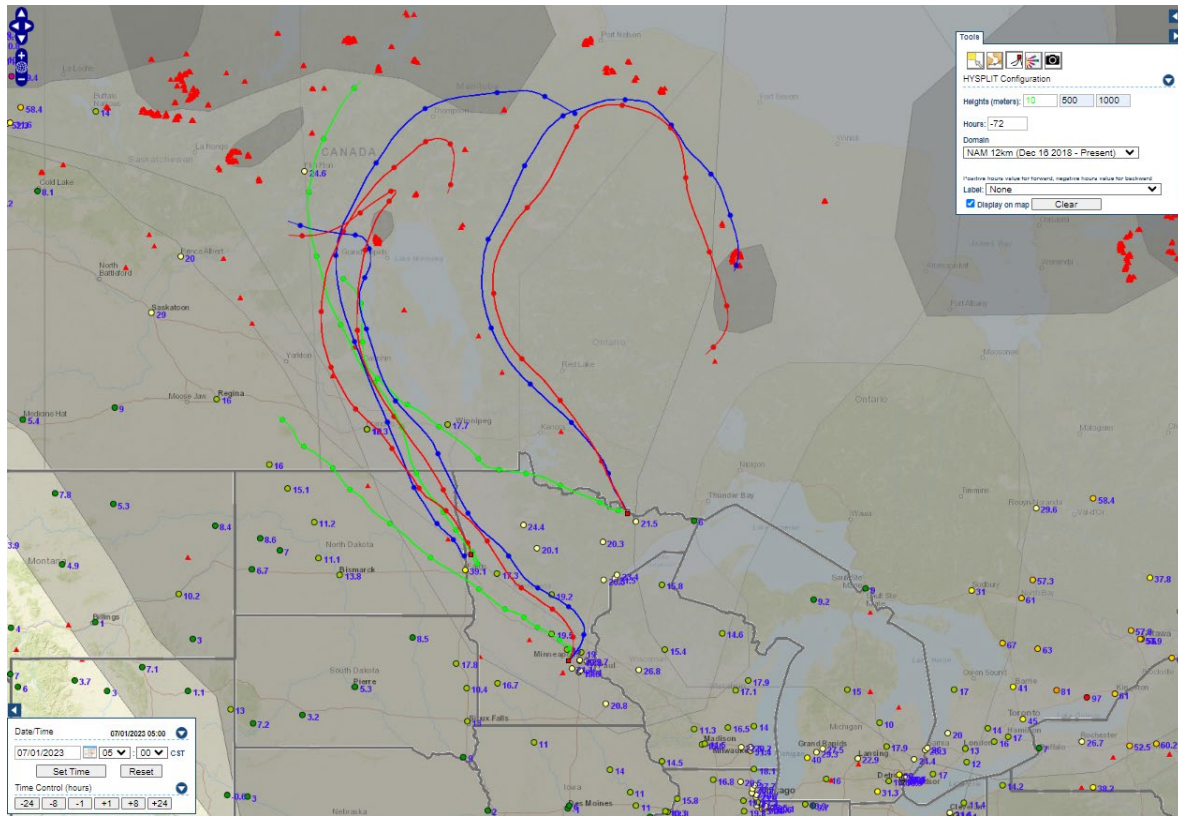
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	7/1/2023	23.8	28.2	Canada Wildfire Smoke
Brainerd	270353204	7/1/2023	23.2	26.2	Canada Wildfire Smoke
Detroit Lakes	270052013	7/1/2023	20.7	25.7	Canada Wildfire Smoke
Duluth-WDSE	271377550	7/1/2023	19.5	24.7	Canada Wildfire Smoke
Fargo NW	380171004	7/1/2023	28.4	43.5	Canada Wildfire Smoke
Lakeville - Near Road	270370480	7/1/2023	22.4	37	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/1/2023	22.6	26.1	Canada Wildfire Smoke
Marshall	270834210	7/1/2023	19.2	21	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	7/1/2023	21.9	27	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	7/1/2023	21.4	26.7	Canada Wildfire Smoke
Red Lake Nation	270072304	7/1/2023	25.9	29.3	Canada Wildfire Smoke
Rochester	271095008	7/1/2023	20.1	35.5	Canada Wildfire Smoke
Shakopee	271390505	7/1/2023	22.8	36.2	Canada Wildfire Smoke
St. Cloud	271453052	7/1/2023	23.7	37.7	Canada Wildfire Smoke
St. Michael	271713201	7/1/2023	22.9	53.7	Canada Wildfire Smoke
St. Paul-Harding	271230871	7/1/2023	23.0	33.4	Canada Wildfire Smoke
West Duluth	271377554	7/1/2023	17.7	23.2	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 1, 2023.



MODIS visible satellite for July 1, 2023.



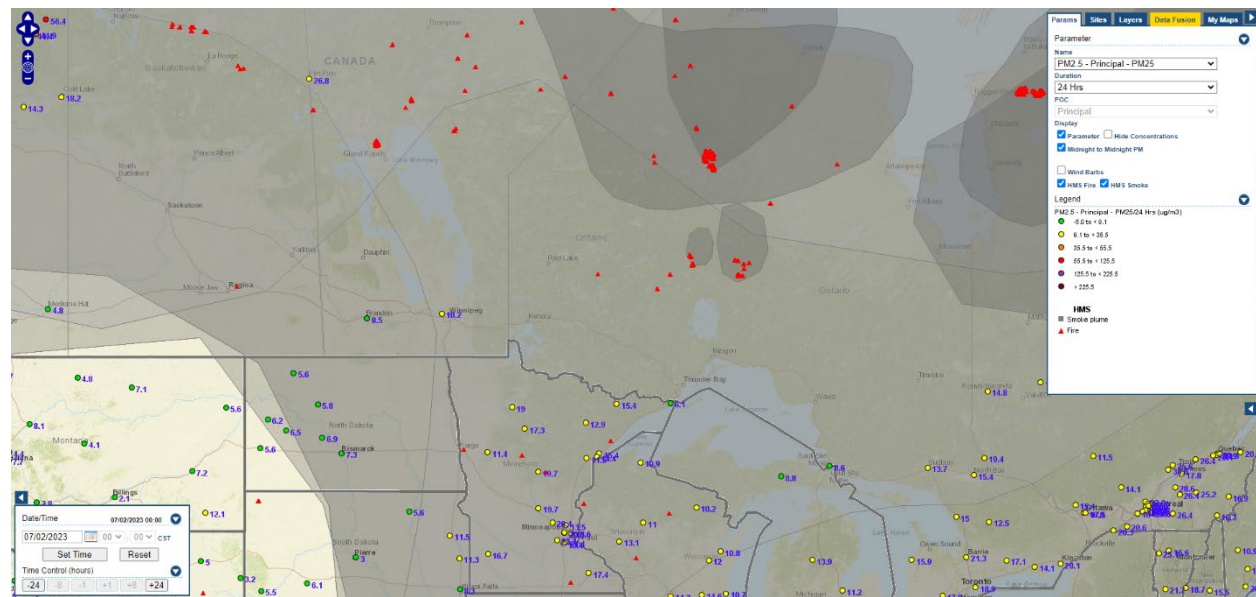
Backward trajectories for July 1, 2023.

7/2/2023 Impacts

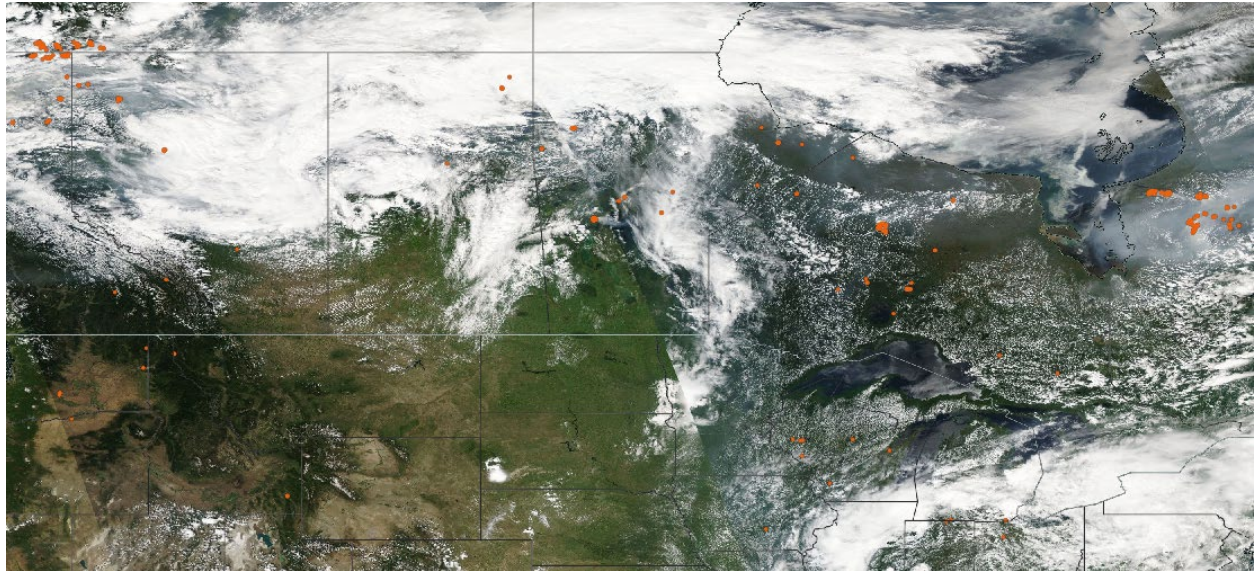
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 2, 2023.

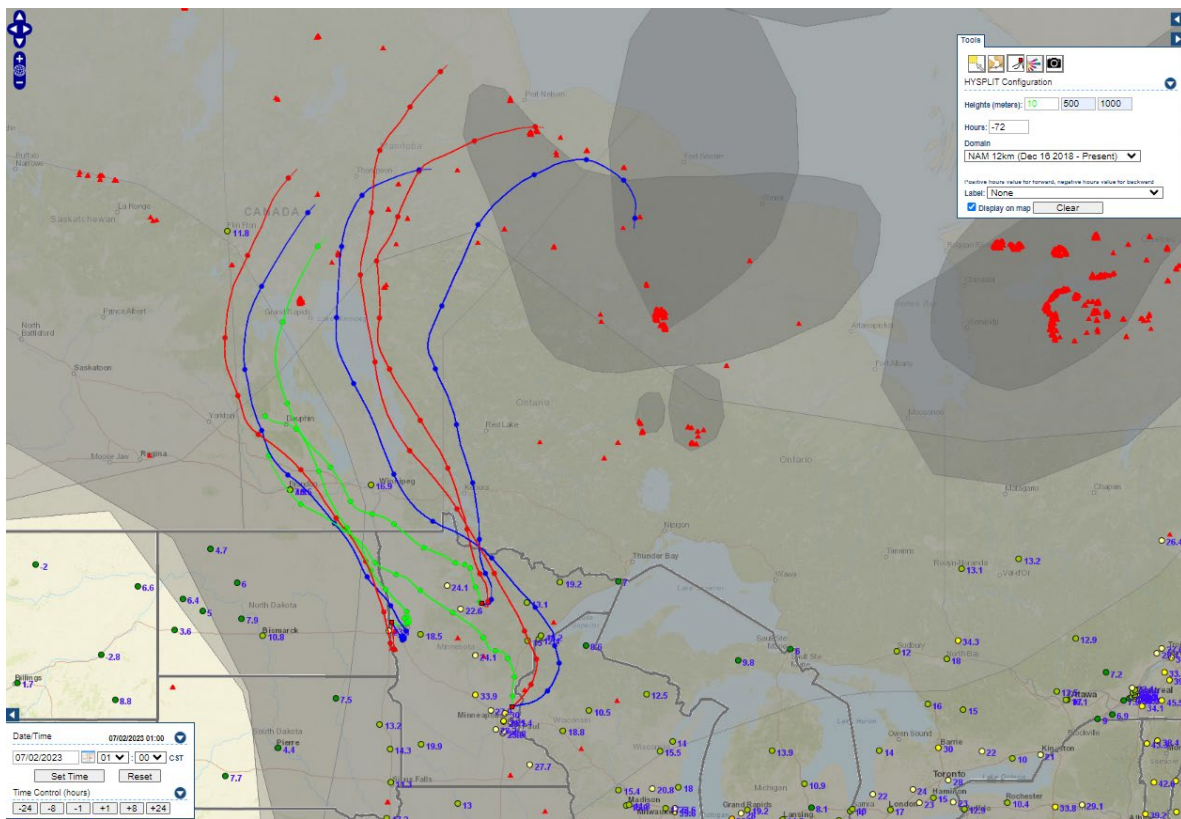
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	7/2/2023	21.4	31.9	Canada Wildfire Smoke
Brainerd	270353204	7/2/2023	19.7	27.3	Canada Wildfire Smoke
Fargo NW	380171004	7/2/2023	22.2	23.6	Canada Wildfire Smoke
Lakeville - Near Road	270370480	7/2/2023	19.4	27.9	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	7/2/2023	20.6	30.2	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	7/2/2023	20.5	31.1	Canada Wildfire Smoke
Red Lake Nation	270072304	7/2/2023	19.0	26	Canada Wildfire Smoke
Rochester	271095008	7/2/2023	17.5	33.4	Canada Wildfire Smoke
Shakopee	271390505	7/2/2023	23.4	37.5	Canada Wildfire Smoke
St. Cloud	271453052	7/2/2023	19.7	39.3	Canada Wildfire Smoke
St. Michael	271713201	7/2/2023	20.5	30	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 2, 2023.



MODIS visible satellite for July 2, 2023.



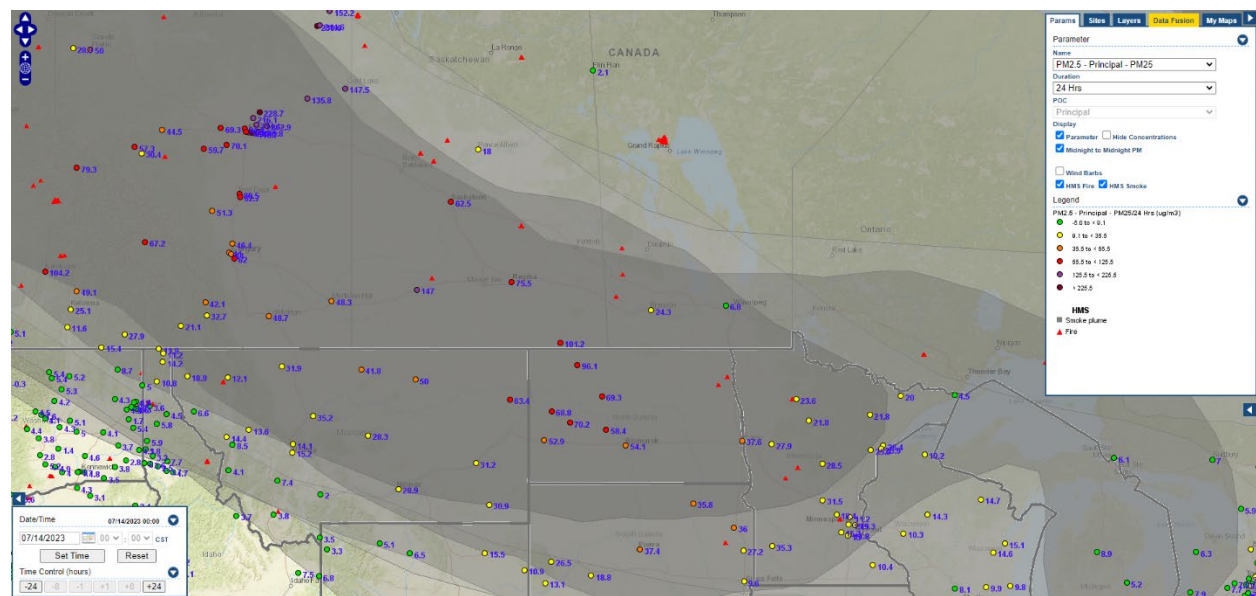
Backward trajectories for July 2, 2023.

7/14/2023 Impacts

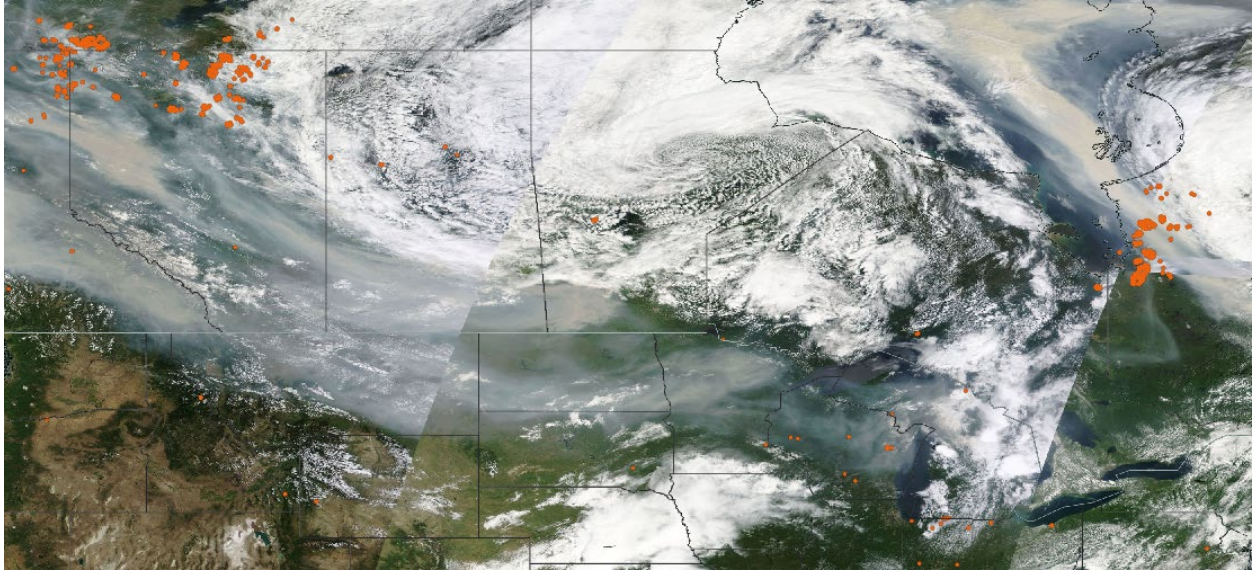
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 14, 2023.

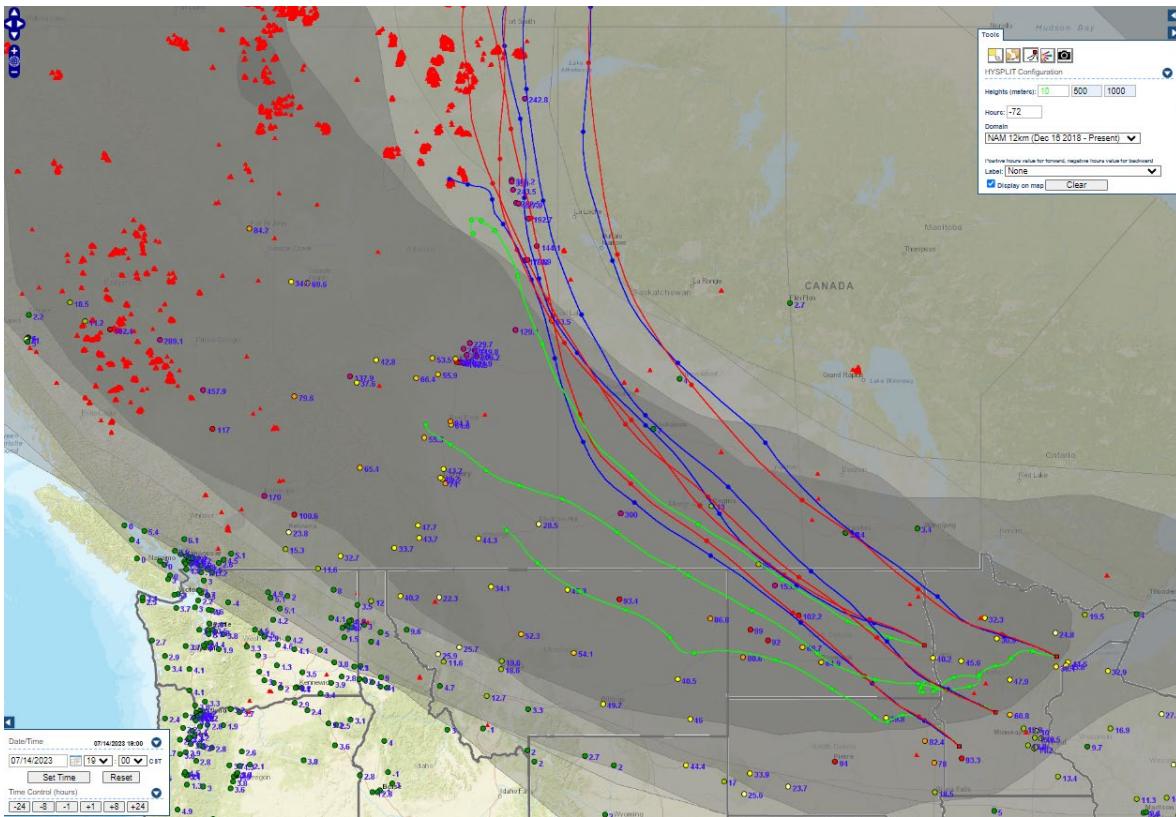
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Brainerd	270353204	7/14/2023	28.6	53.2	Canada Wildfire Smoke
Detroit Lakes	270052013	7/14/2023	28.0	49.7	Canada Wildfire Smoke
Duluth-WDSE	271377550	7/14/2023	26.5	49.1	Canada Wildfire Smoke
Ely	270750005	7/14/2023	20.1	42.2	Canada Wildfire Smoke
Fargo NW	380171004	7/14/2023	37.7	89	Canada Wildfire Smoke
Fond du Lac	270177417	7/14/2023	25.9	52.2	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/14/2023	21.9	40.3	Canada Wildfire Smoke
Marshall	270834210	7/14/2023	35.3	111.3	Canada Wildfire Smoke
Red Lake Nation	270072304	7/14/2023	23.7	35.8	Canada Wildfire Smoke
St. Cloud	271453052	7/14/2023	31.6	84	Canada Wildfire Smoke
Virginia	271377001	7/14/2023	21.9	45.4	Canada Wildfire Smoke
West Duluth	271377554	7/14/2023	26.0	52.7	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 14, 2023.



MODIS visible satellite for July 14, 2023.



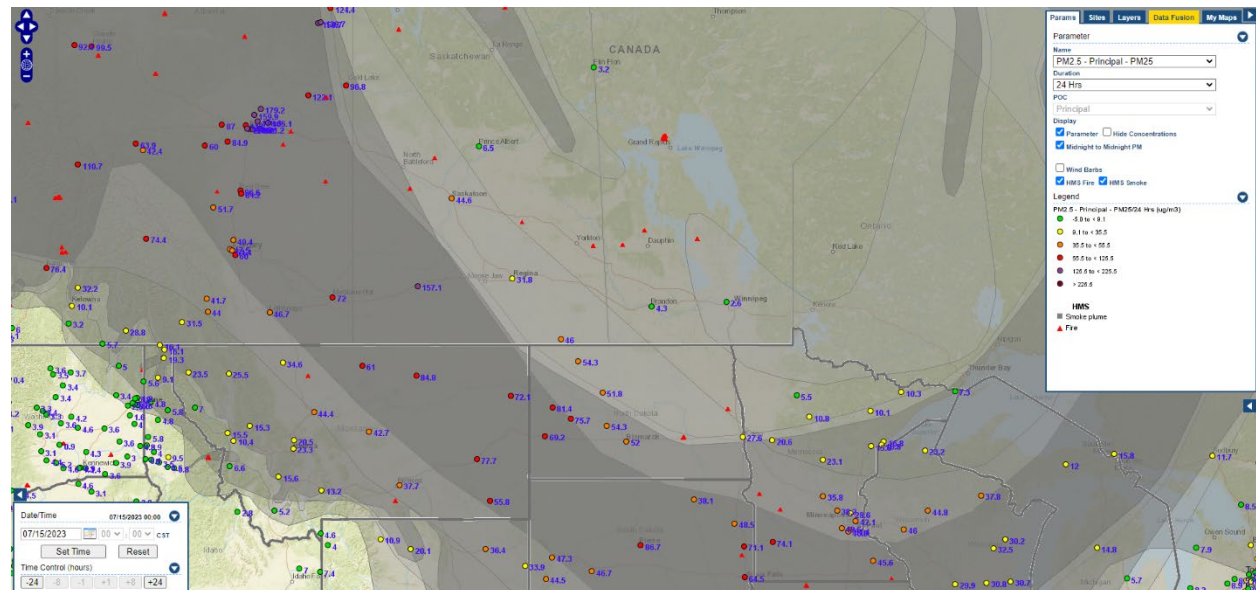
Backward trajectories for July 14, 2023.

7/15/2023 Impacts

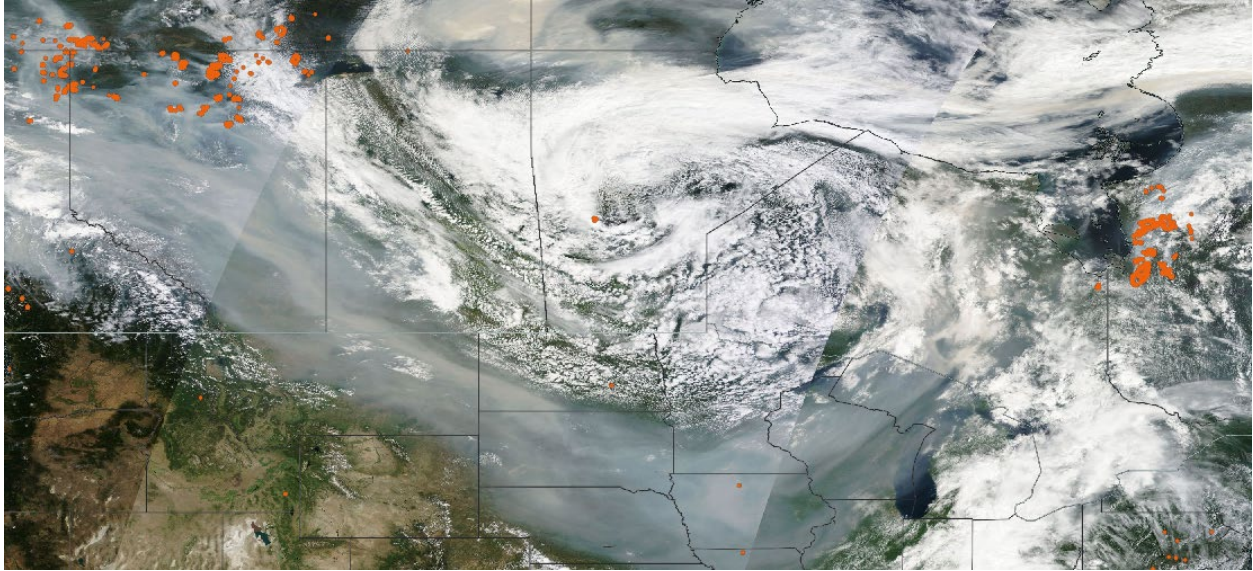
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 15, 2023.

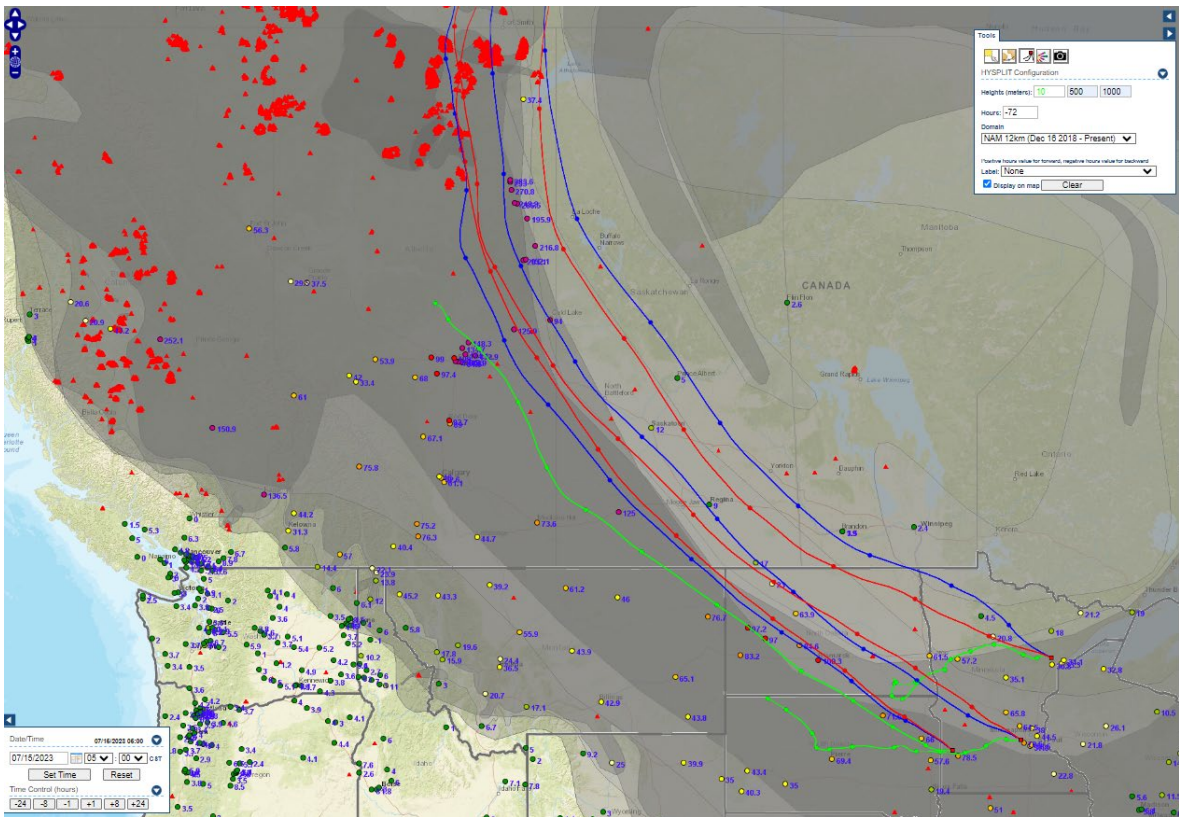
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	7/15/2023	51.4	100.3	Canada Wildfire Smoke
Blaine	270031002	7/15/2023	28.6	55	Canada Wildfire Smoke
Brainerd	270353204	7/15/2023	23.2	81.5	Canada Wildfire Smoke
Detroit Lakes	270052013	7/15/2023	20.6	57.2	Canada Wildfire Smoke
Duluth-WDSE	271377550	7/15/2023	16.8	35.5	Canada Wildfire Smoke
Fargo NW	380171004	7/15/2023	27.7	90.4	Canada Wildfire Smoke
Fond du Lac	270177417	7/15/2023	15.7	32.6	Canada Wildfire Smoke
Lakeville - Near Road	270370480	7/15/2023	47.0	83.9	Canada Wildfire Smoke
Marshall	270834210	7/15/2023	74.1	114.2	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	7/15/2023	47.8	48.5	Canada Wildfire Smoke
Rochester	271095008	7/15/2023	45.7	80.5	Canada Wildfire Smoke
Shakopee	271390505	7/15/2023	49.7	84.8	Canada Wildfire Smoke
St. Cloud	271453052	7/15/2023	35.8	66.6	Canada Wildfire Smoke
St. Michael	271713201	7/15/2023	38.3	77.9	Canada Wildfire Smoke
St. Paul-Harding	271230871	7/15/2023	42.2	81.2	Canada Wildfire Smoke
West Duluth	271377554	7/15/2023	16.9	33.8	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 15, 2023.



MODIS visible satellite for July 15, 2023.



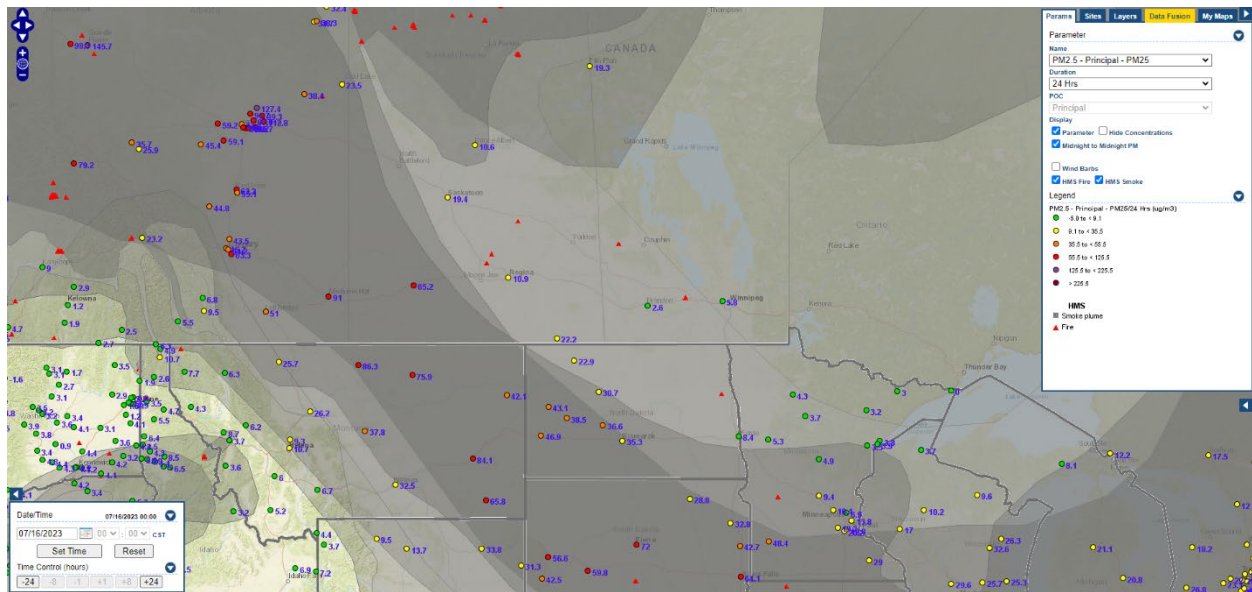
Backward trajectories for July 15, 2023.

7/16/2023 Impacts

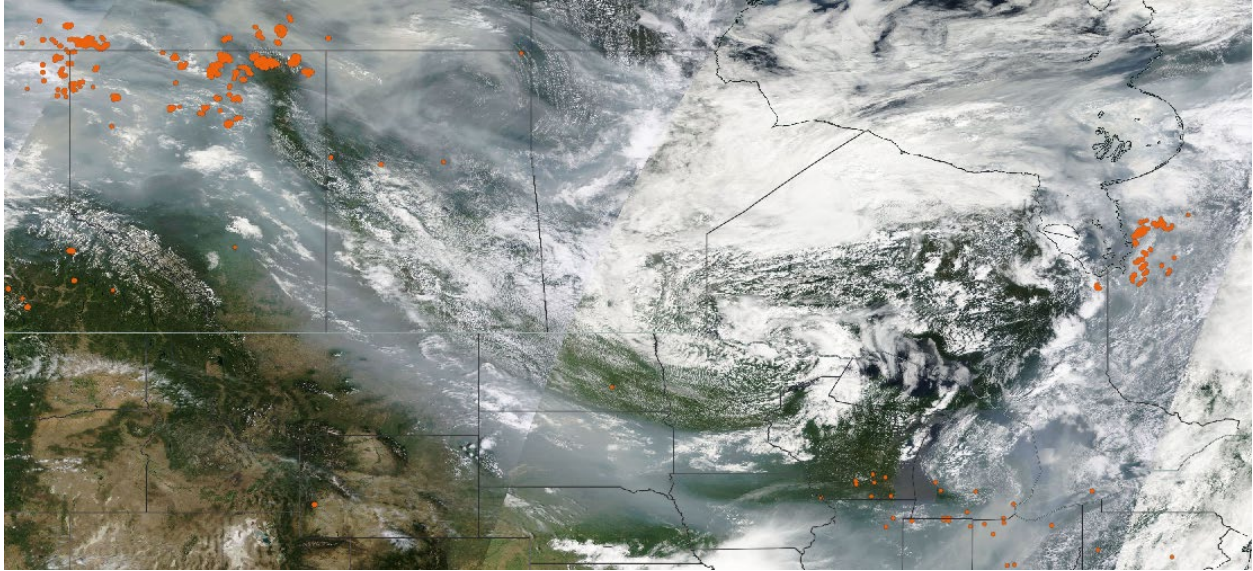
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 16, 2023.

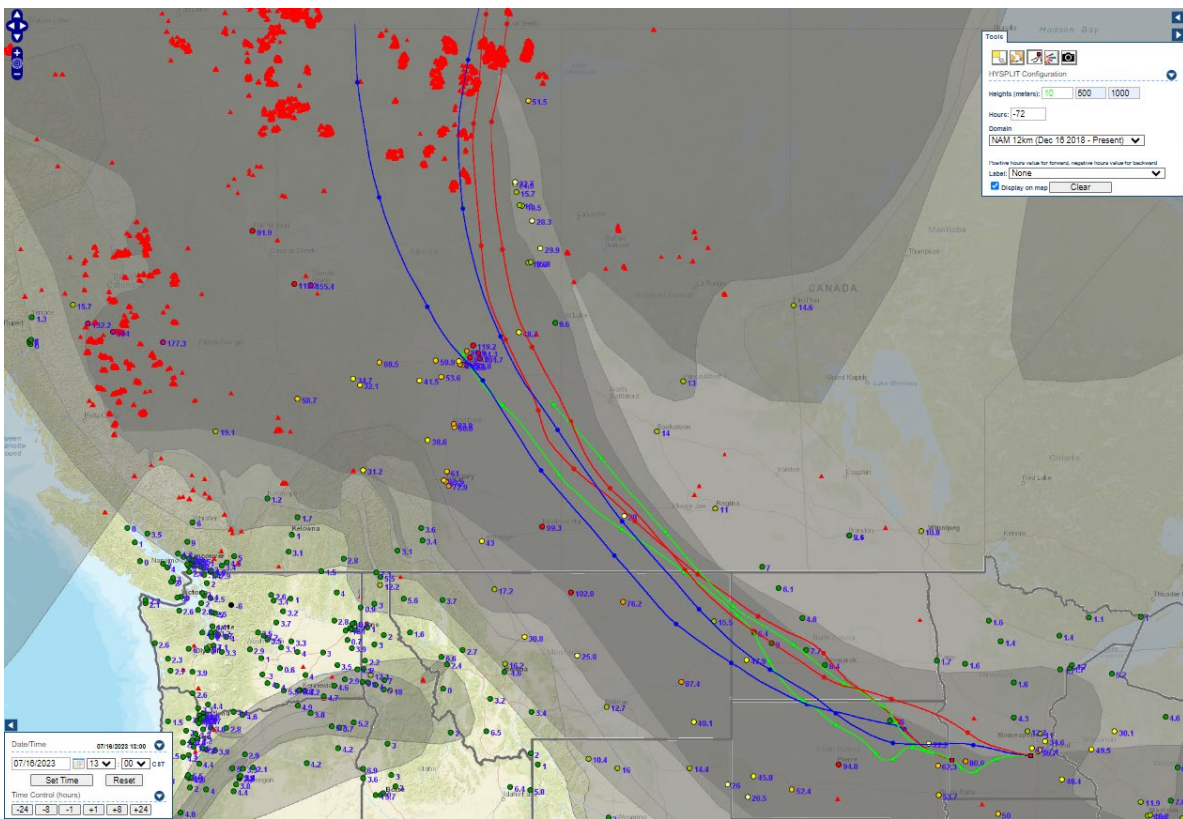
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	7/16/2023	19.9	63.3	Canada Wildfire Smoke
Lakeville - Near Road	270370480	7/16/2023	20.3	61.5	Canada Wildfire Smoke
Marshall	270834210	7/16/2023	48.4	91	Canada Wildfire Smoke
Rochester	271095008	7/16/2023	29.1	76.8	Canada Wildfire Smoke
Shakopee	271390505	7/16/2023	19.4	56.1	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 16, 2023.



MODIS visible satellite for July 16, 2023.



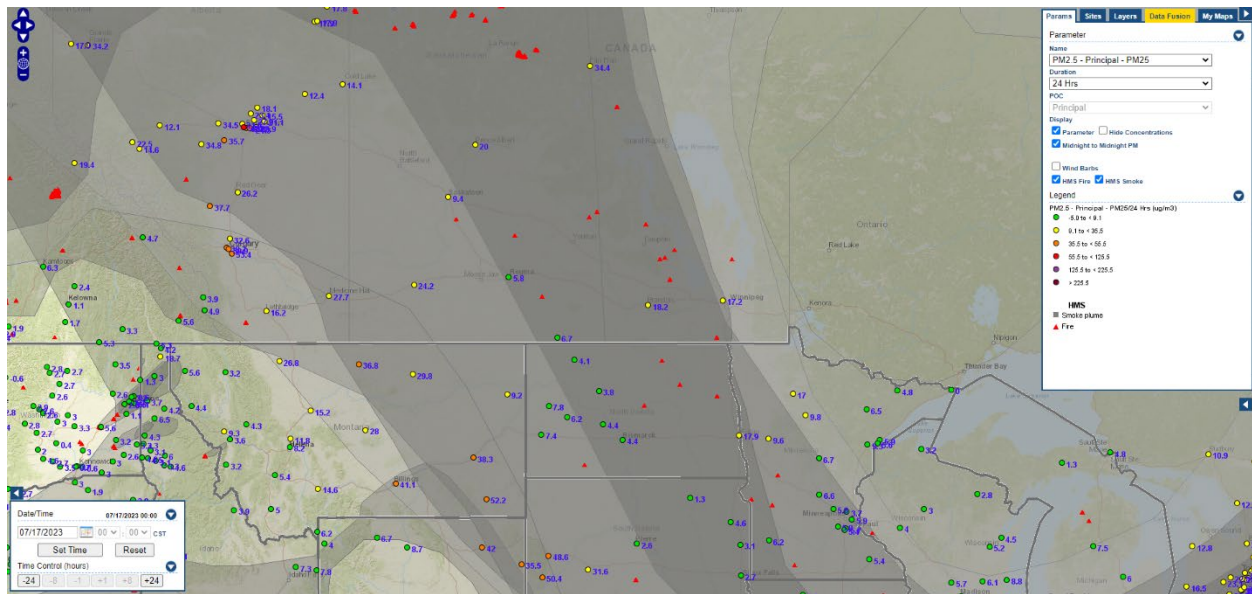
Backward trajectories for July 16, 2023.

7/17/2023 Impacts

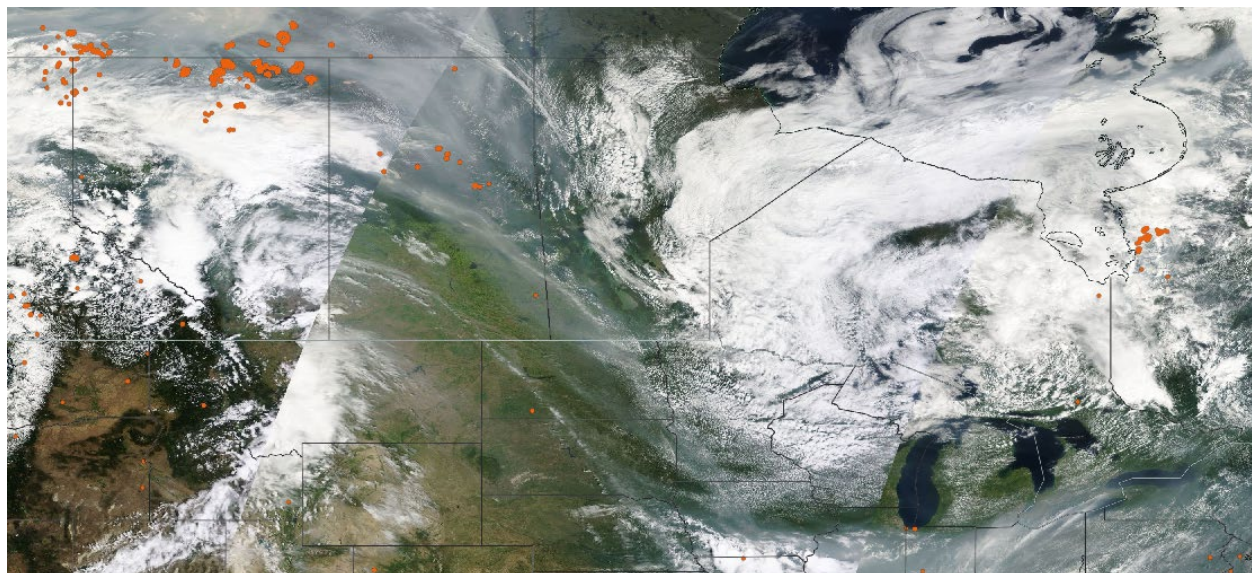
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 17, 2023.

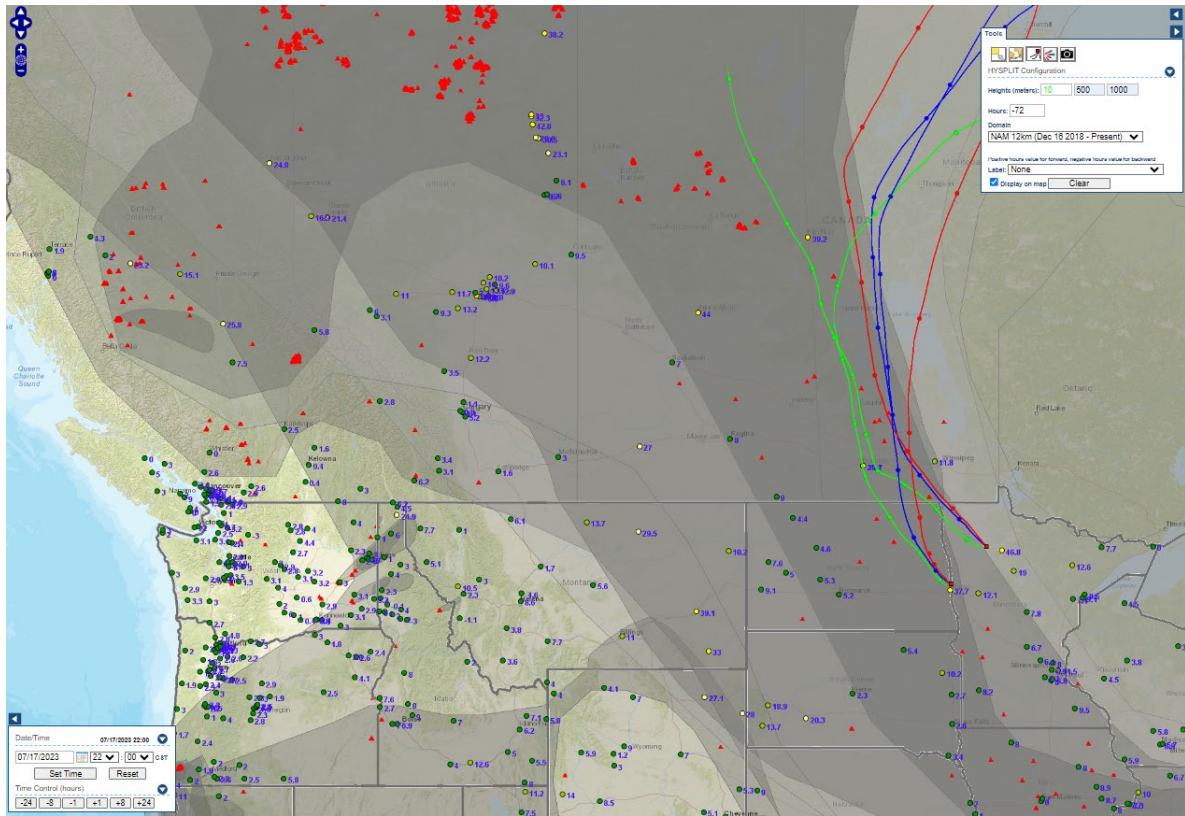
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Red Lake Nation	270072304	7/17/2023	17.1	47	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 17, 2023.



MODIS visible satellite for July 17, 2023.



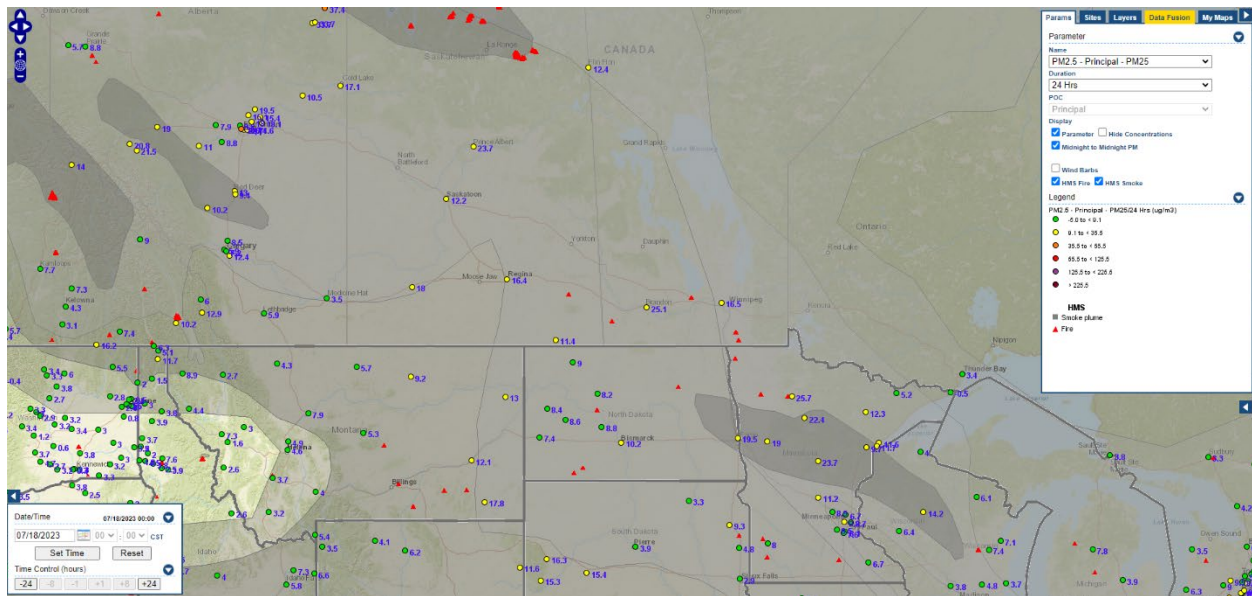
Backward trajectories for July 17, 2023.

7/18/2023 Impacts

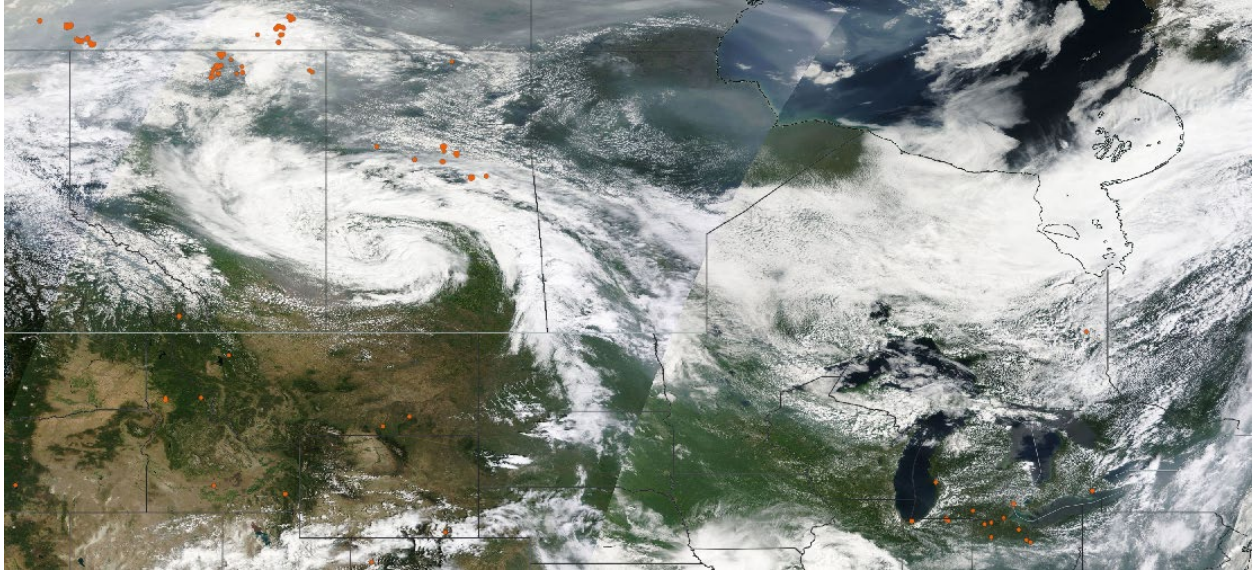
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 18, 2023.

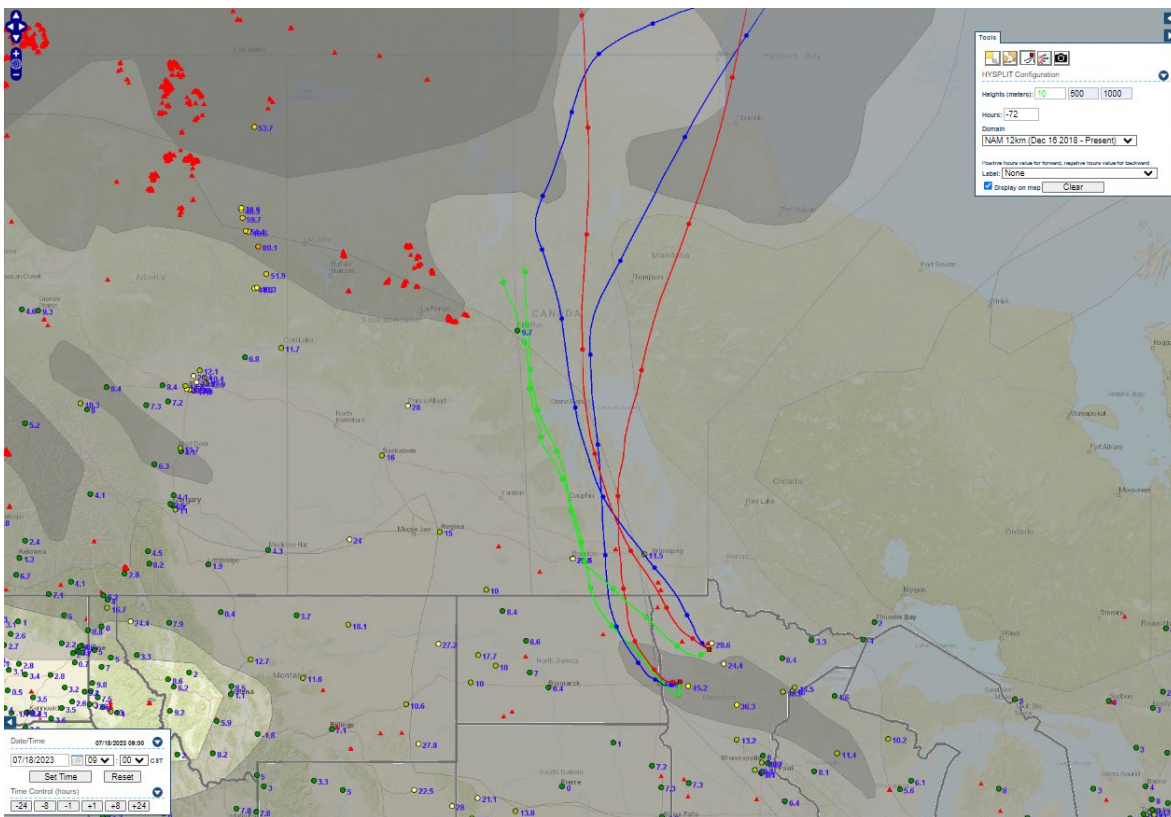
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Brainerd	270353204	7/18/2023	23.8	38.2	Canada Wildfire Smoke
Detroit Lakes	270052013	7/18/2023	19.0	45.2	Canada Wildfire Smoke
Fargo NW	380171004	7/18/2023	19.6	37.9	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/18/2023	22.4	36.9	Canada Wildfire Smoke
Red Lake Nation	270072304	7/18/2023	25.8	47.1	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 18, 2023.



MODIS visible satellite for July 18, 2023.



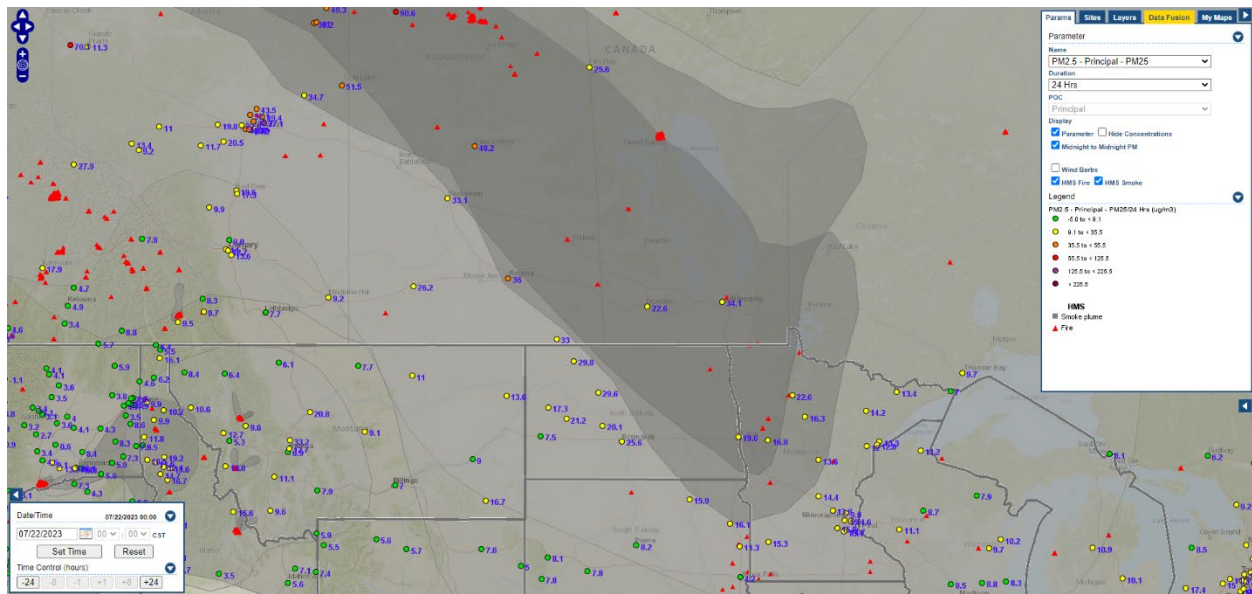
Backward trajectories for July 18, 2023.

7/22/2023 Impacts

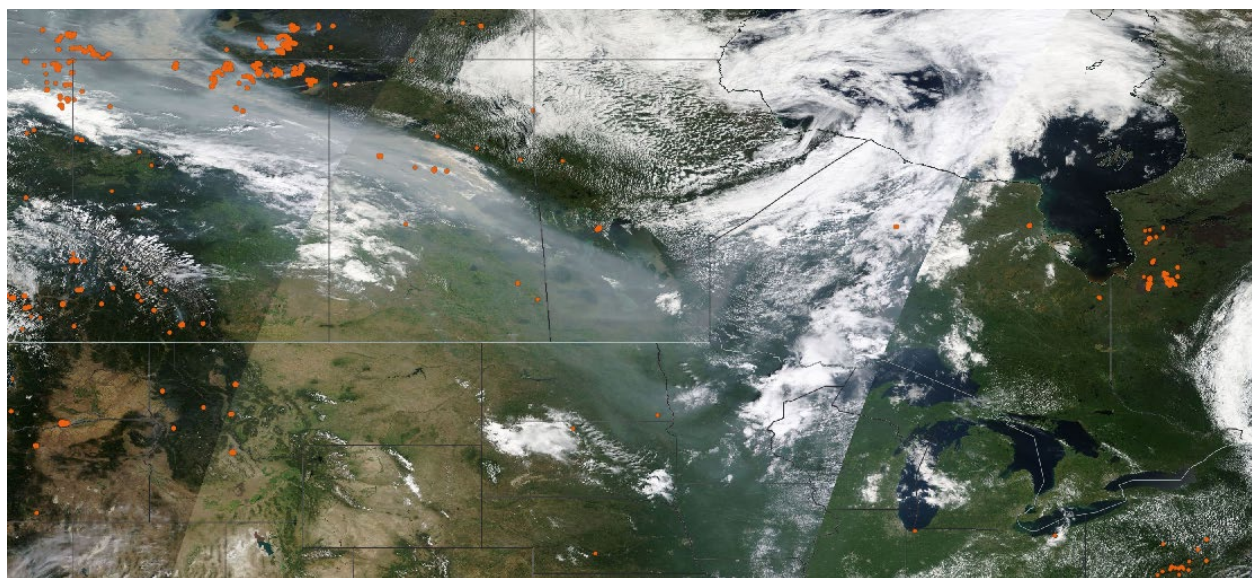
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 22, 2023.

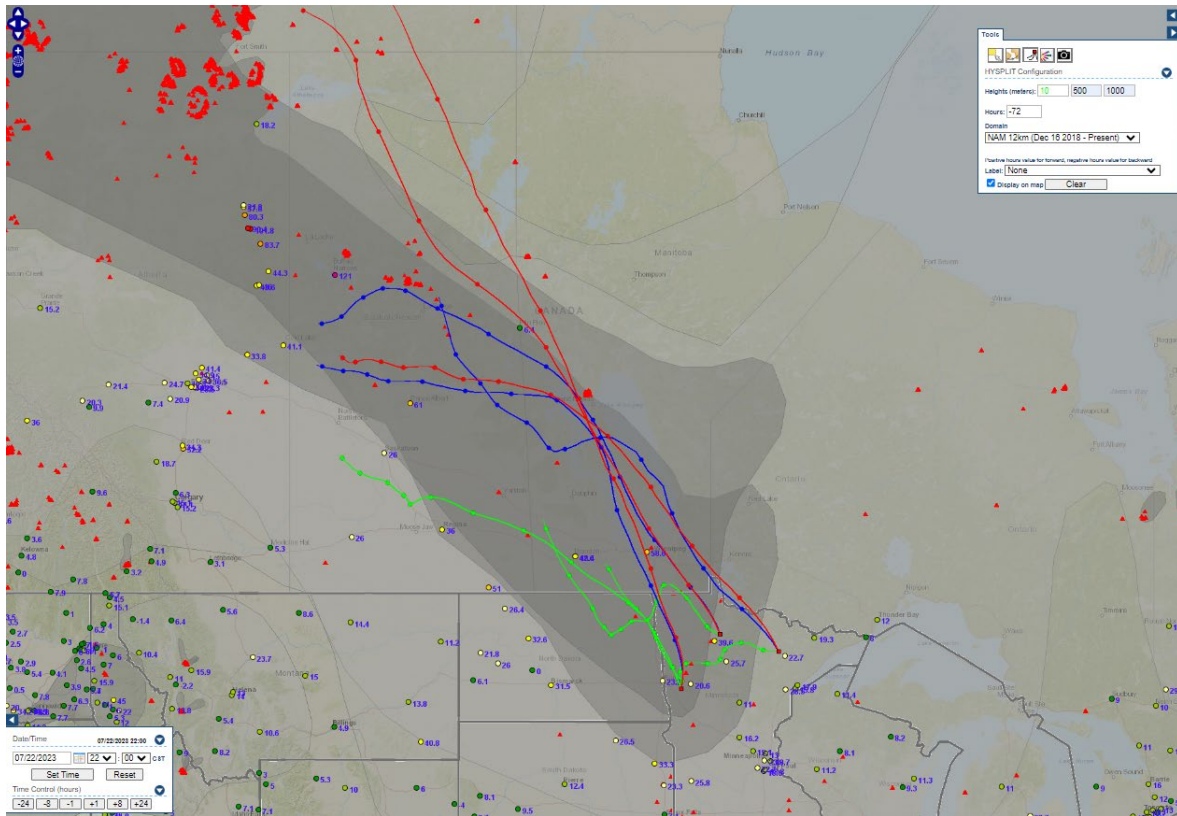
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Fargo NW	380171004	7/22/2023	19.7	26.2	Canada Wildfire Smoke
Red Lake Nation	270072304	7/22/2023	22.6	47.8	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 22, 2023.



MODIS visible satellite for July 22, 2023.



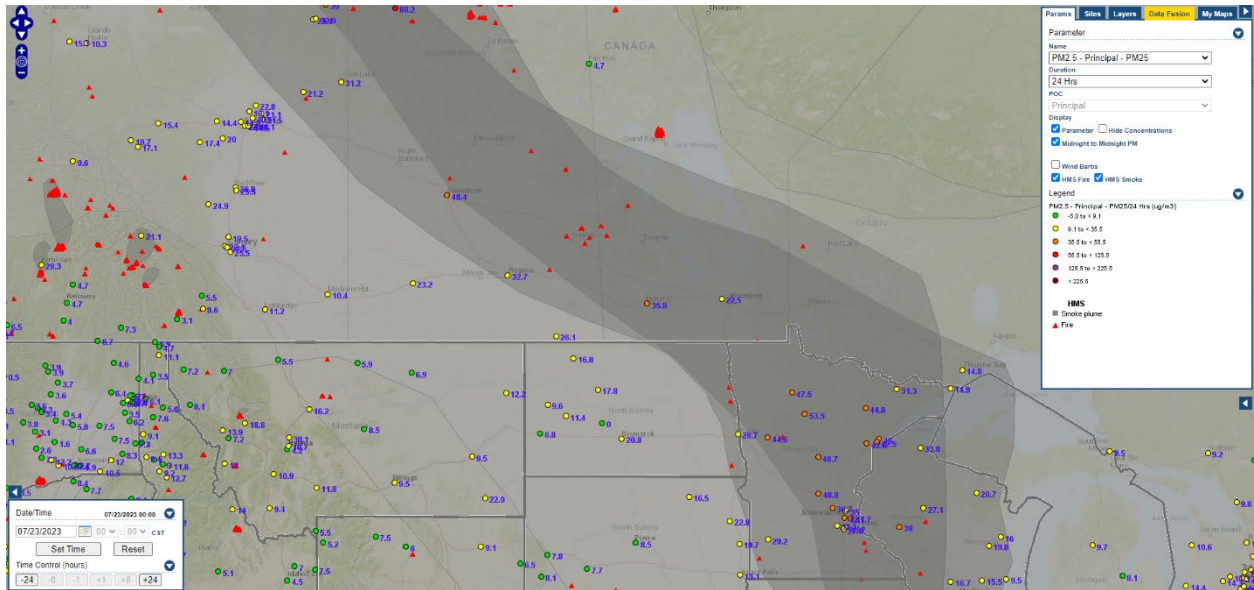
Backward trajectories for July 22, 2023.

7/23/2023 Impacts

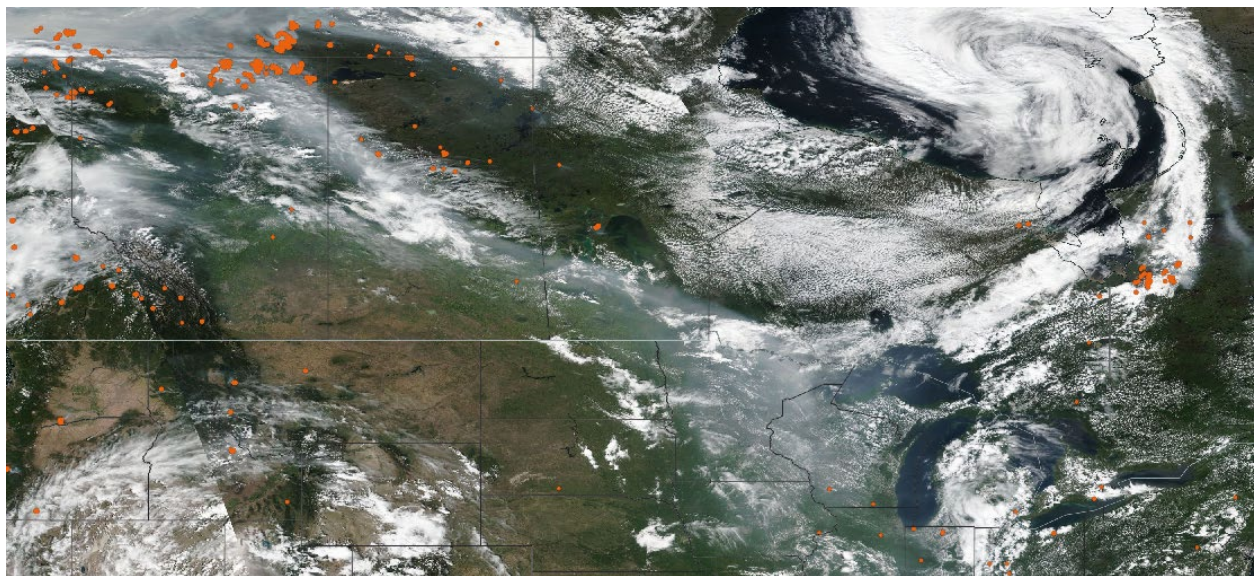
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 23, 2023.

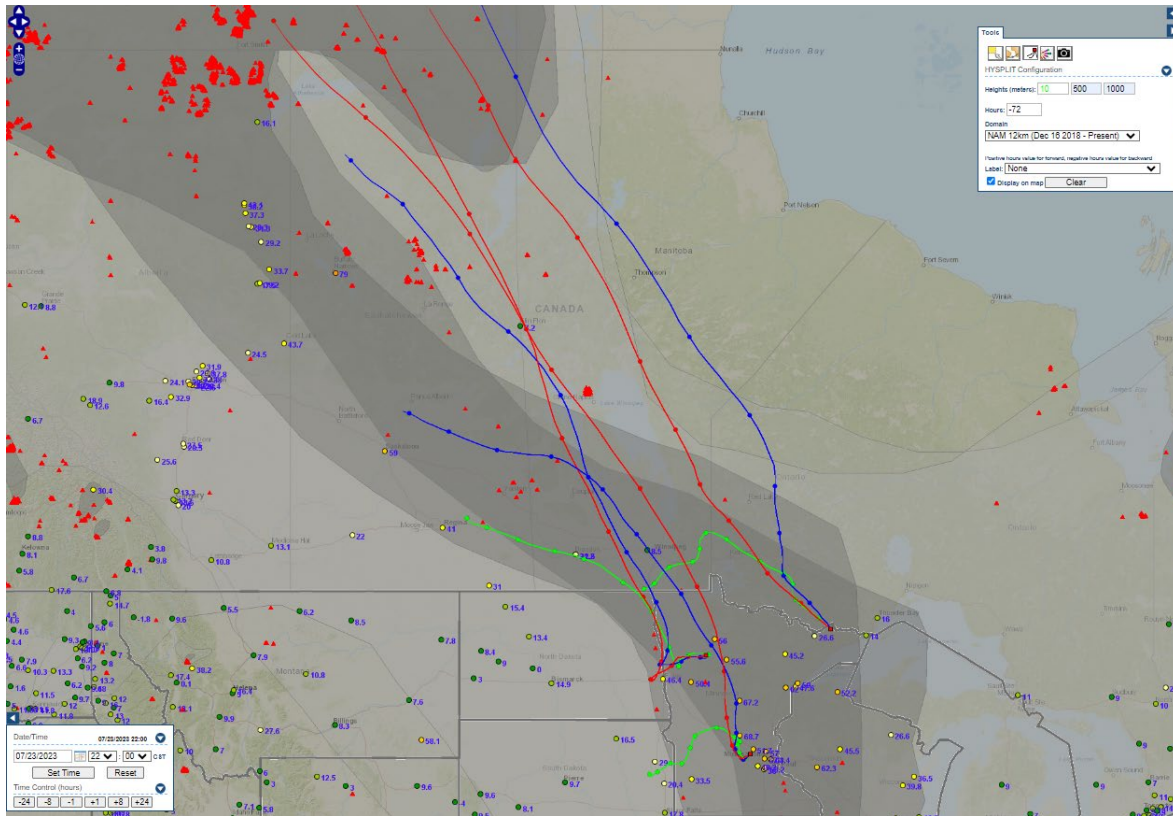
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	7/23/2023	33.3	57.6	Canada Wildfire Smoke
Blaine	270031002	7/23/2023	35.1	57	Canada Wildfire Smoke
Brainerd	270353204	7/23/2023	48.7	71.6	Canada Wildfire Smoke
Detroit Lakes	270052013	7/23/2023	44.6	82	Canada Wildfire Smoke
Duluth-WDSE	271377550	7/23/2023	46.0	64.3	Canada Wildfire Smoke
Ely	270750005	7/23/2023	31.4	49	Canada Wildfire Smoke
Fargo NW	380171004	7/23/2023	28.8	47.5	Canada Wildfire Smoke
Fond du Lac	270177417	7/23/2023	42.8	66.5	Canada Wildfire Smoke
Grand Portage	270317810	7/23/2023	15.0	41	Canada Wildfire Smoke
Lakeville - Near Road	270370480	7/23/2023	27.6	46.1	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/23/2023	53.5	76.2	Canada Wildfire Smoke
Marshall	270834210	7/23/2023	29.2	35.9	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	7/23/2023	42.8	76.1	Canada Wildfire Smoke
Red Lake Nation	270072304	7/23/2023	47.5	62.6	Canada Wildfire Smoke
Shakopee	271390505	7/23/2023	32.3	51.7	Canada Wildfire Smoke
St. Cloud	271453052	7/23/2023	48.9	70.5	Canada Wildfire Smoke
St. Michael	271713201	7/23/2023	36.7	59	Canada Wildfire Smoke
St. Paul-Harding	271230871	7/23/2023	41.8	66.2	Canada Wildfire Smoke
Virginia	271377001	7/23/2023	44.8	58.2	Canada Wildfire Smoke
West Duluth	271377554	7/23/2023	42.6	61.1	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 23, 2023.



MODIS visible satellite for July 23, 2023.



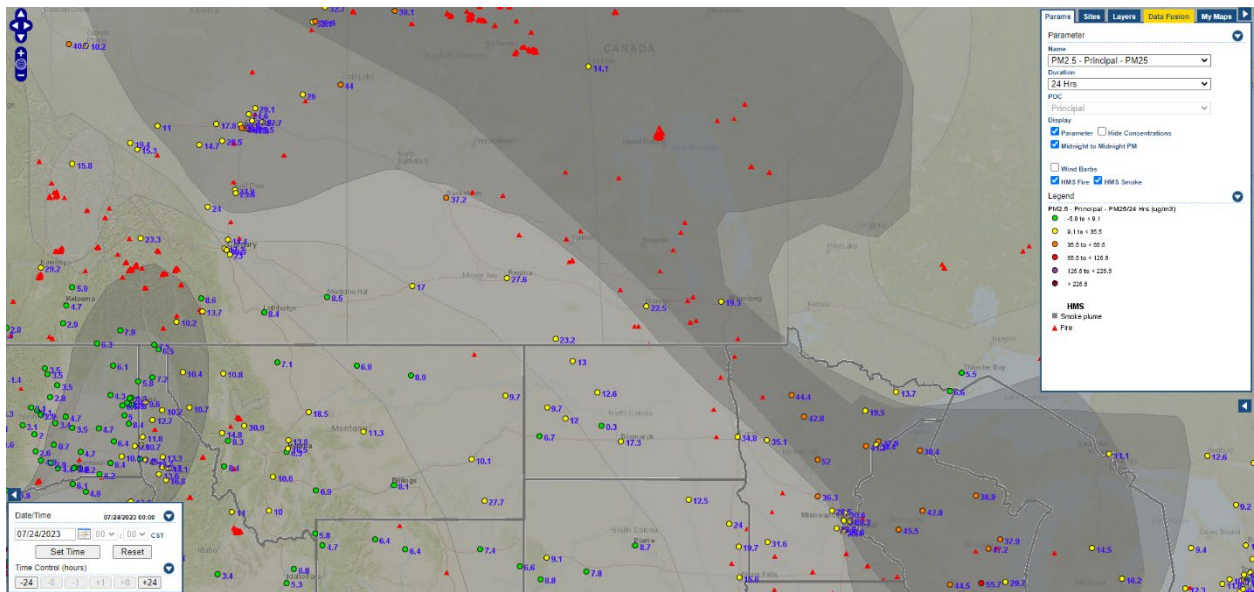
Backward trajectories for July 23, 2023.

7/24/2023 Impacts

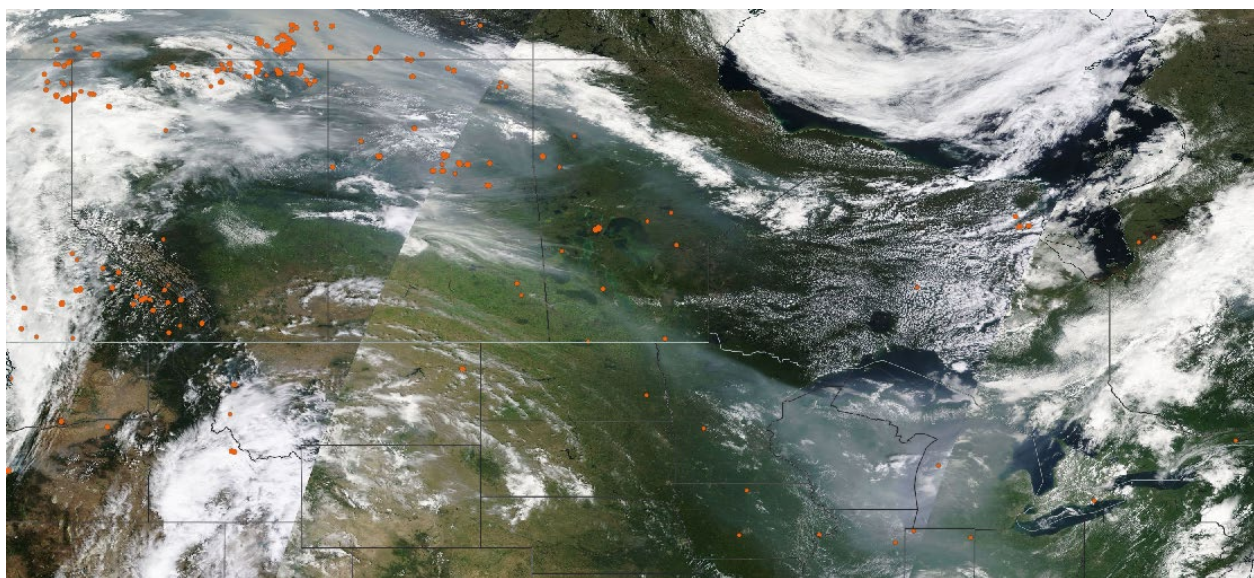
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 24, 2023.

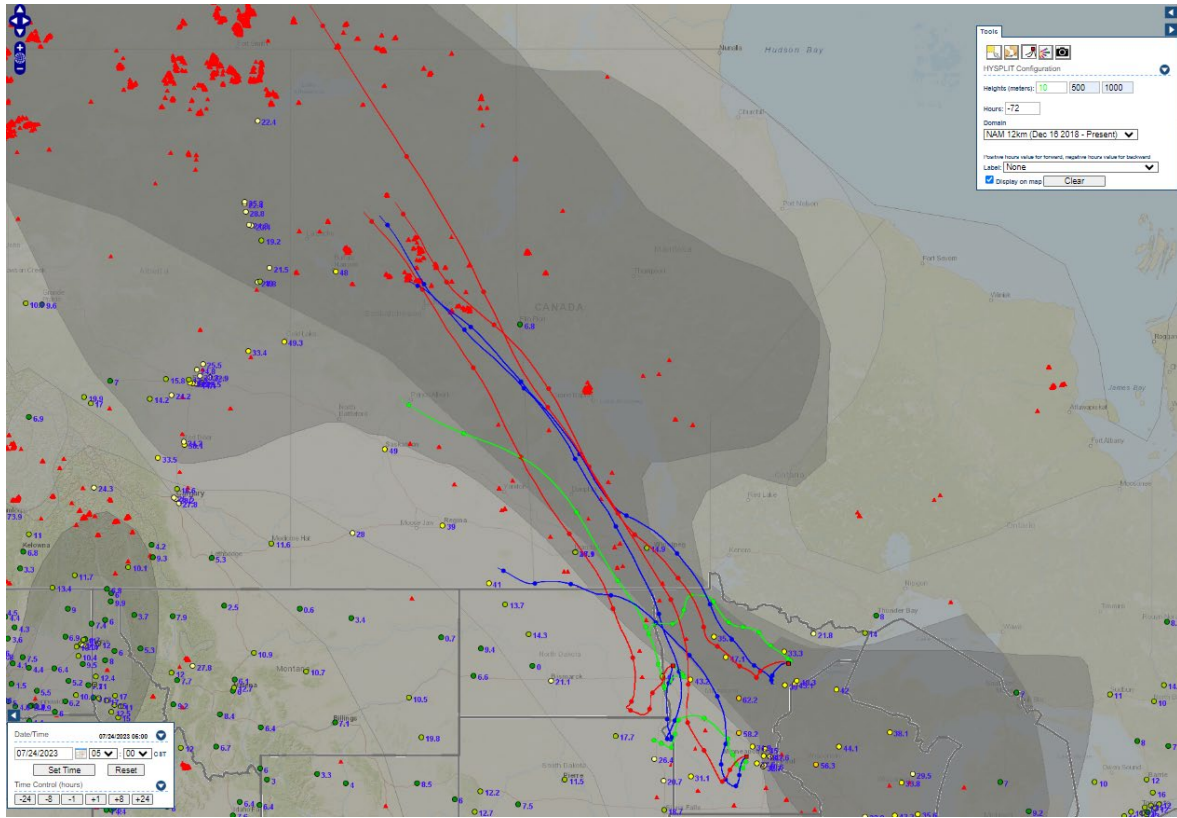
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	7/24/2023	28.9	44.7	Canada Wildfire Smoke
Blaine	270031002	7/24/2023	30.6	66	Canada Wildfire Smoke
Brainerd	270353204	7/24/2023	52.0	64.6	Canada Wildfire Smoke
Detroit Lakes	270052013	7/24/2023	35.1	51.1	Canada Wildfire Smoke
Duluth-WDSE	271377550	7/24/2023	37.9	55.8	Canada Wildfire Smoke
Fargo NW	380171004	7/24/2023	34.9	46.9	Canada Wildfire Smoke
Fond du Lac	270177417	7/24/2023	41.3	52.4	Canada Wildfire Smoke
Lakeville - Near Road	270370480	7/24/2023	25.5	36	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/24/2023	42.9	54	Canada Wildfire Smoke
Marshall	270834210	7/24/2023	31.7	36	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	7/24/2023	35.0	139	Canada Wildfire Smoke
Red Lake Nation	270072304	7/24/2023	44.4	57.9	Canada Wildfire Smoke
Rochester	271095008	7/24/2023	33.1	38.8	Canada Wildfire Smoke
Shakopee	271390505	7/24/2023	28.9	41.1	Canada Wildfire Smoke
St. Cloud	271453052	7/24/2023	36.3	64.9	Canada Wildfire Smoke
St. Michael	271713201	7/24/2023	28.6	44.8	Canada Wildfire Smoke
St. Paul-Harding	271230871	7/24/2023	32.4	52.7	Canada Wildfire Smoke
Virginia	271377001	7/24/2023	19.6	46.2	Canada Wildfire Smoke
West Duluth	271377554	7/24/2023	34.4	46.8	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 24, 2023.



MODIS visible satellite for July 24, 2023.



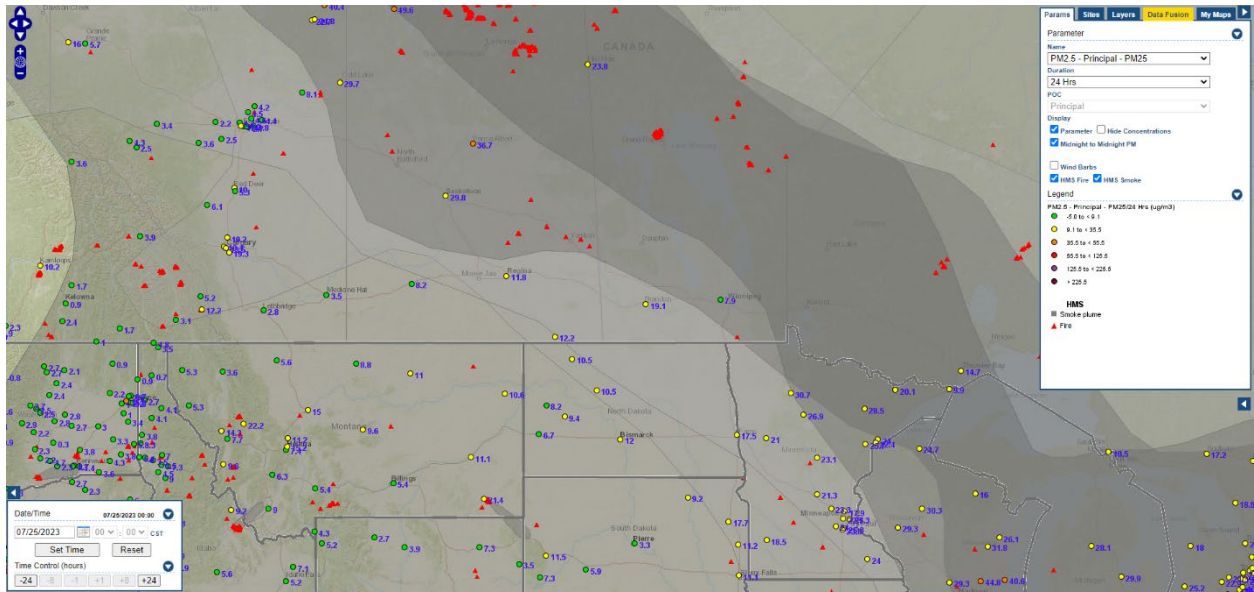
Backward trajectories for July 24, 2023.

7/25/2023 Impacts

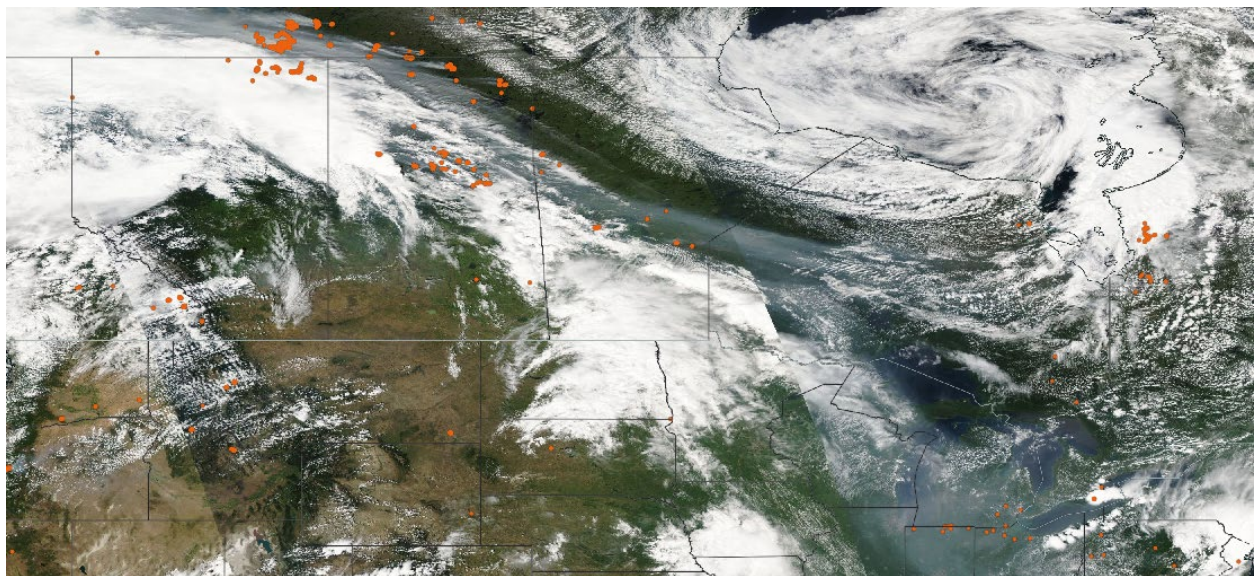
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 25, 2023.

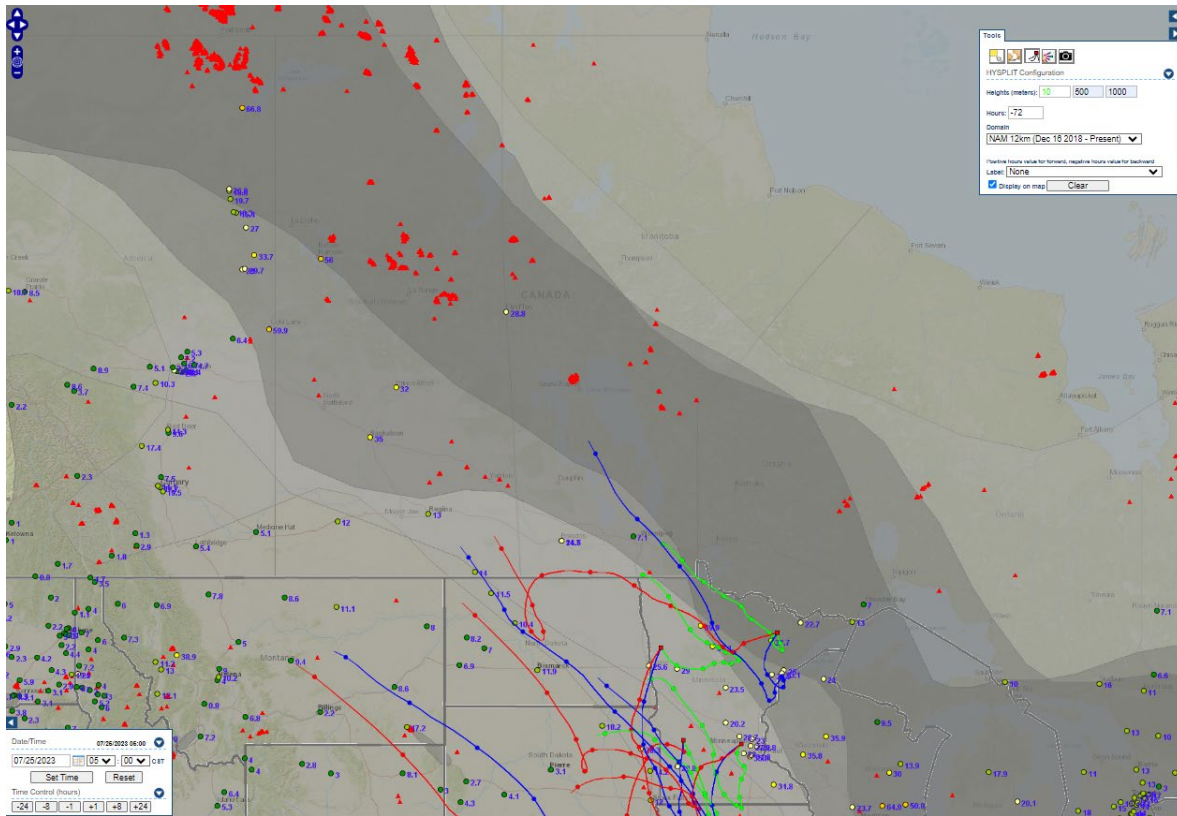
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	7/25/2023	25.4	38.5	Canada Wildfire Smoke
Brainerd	270353204	7/25/2023	23.2	37.5	Canada Wildfire Smoke
Detroit Lakes	270052013	7/25/2023	21.0	38.1	Canada Wildfire Smoke
Duluth-WDSE	271377550	7/25/2023	24.0	28.7	Canada Wildfire Smoke
Ely	270750005	7/25/2023	20.1	30.1	Canada Wildfire Smoke
Fond du Lac	270177417	7/25/2023	25.8	27.8	Canada Wildfire Smoke
Lakeville - Near Road	270370480	7/25/2023	23.8	35.9	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/25/2023	26.9	37.4	Canada Wildfire Smoke
Marshall	270834210	7/25/2023	18.6	38.3	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	7/25/2023	22.8	34.7	Canada Wildfire Smoke
Red Lake Nation	270072304	7/25/2023	30.7	40.2	Canada Wildfire Smoke
Rochester	271095008	7/25/2023	24.0	33.8	Canada Wildfire Smoke
Shakopee	271390505	7/25/2023	24.0	38.2	Canada Wildfire Smoke
St. Cloud	271453052	7/25/2023	21.3	32	Canada Wildfire Smoke
St. Michael	271713201	7/25/2023	23.4	35.5	Canada Wildfire Smoke
St. Paul-Harding	271230871	7/25/2023	25.3	36.9	Canada Wildfire Smoke
Virginia	271377001	7/25/2023	28.6	37.7	Canada Wildfire Smoke
West Duluth	271377554	7/25/2023	22.5	25	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 25, 2023.



MODIS visible satellite for July 25, 2023.



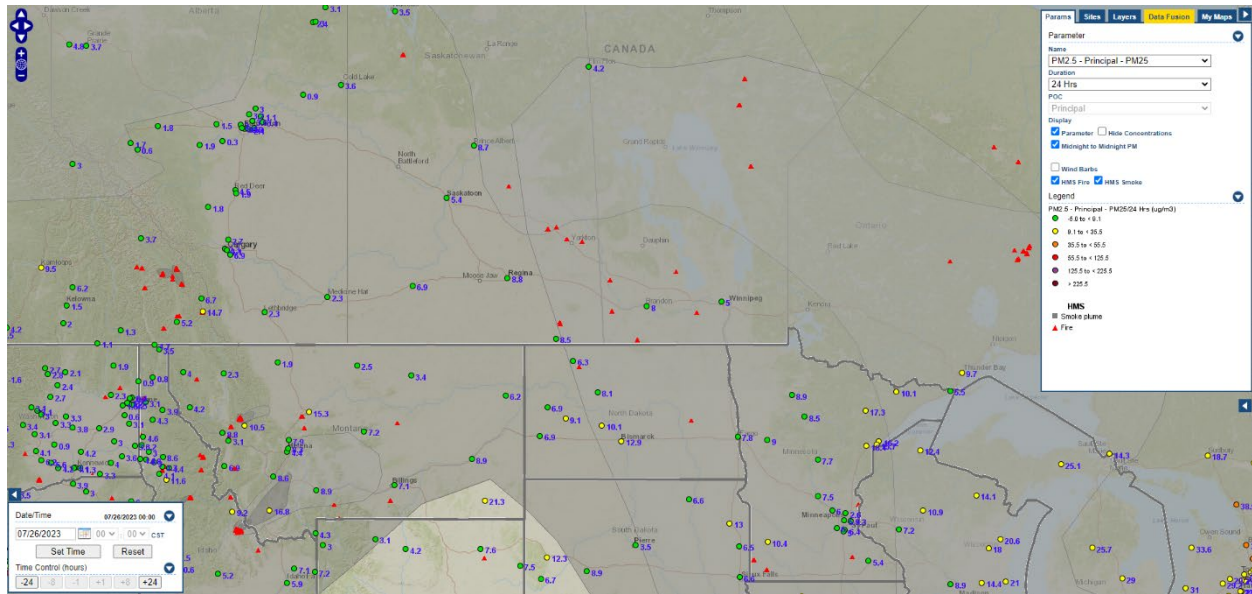
Backward trajectories for July 25, 2023.

7/26/2023 Impacts

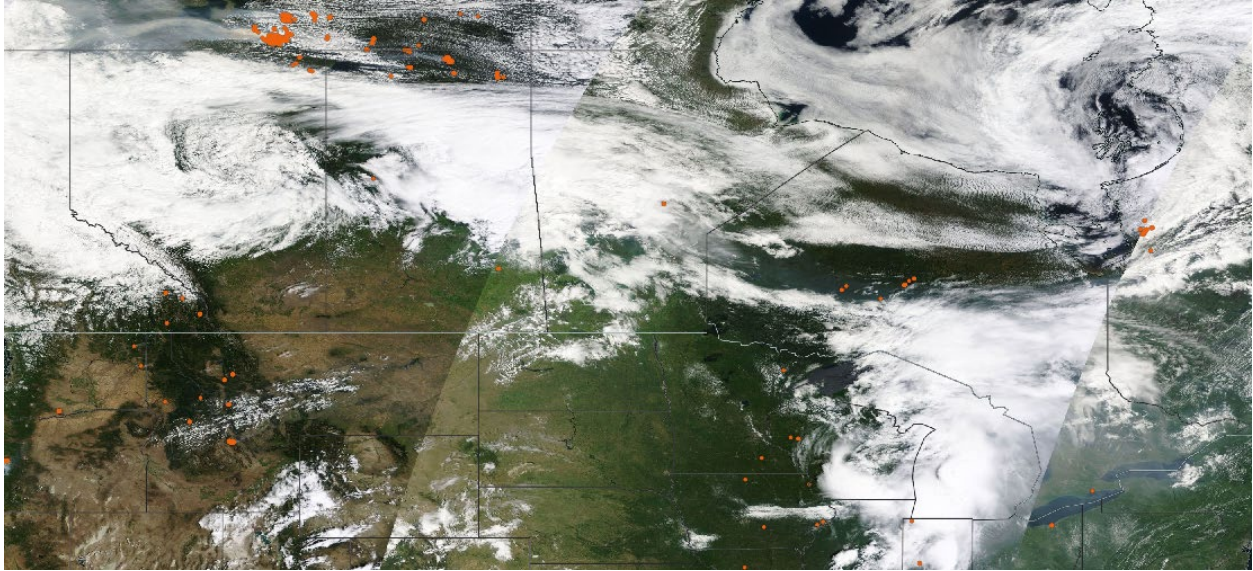
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 26, 2023.

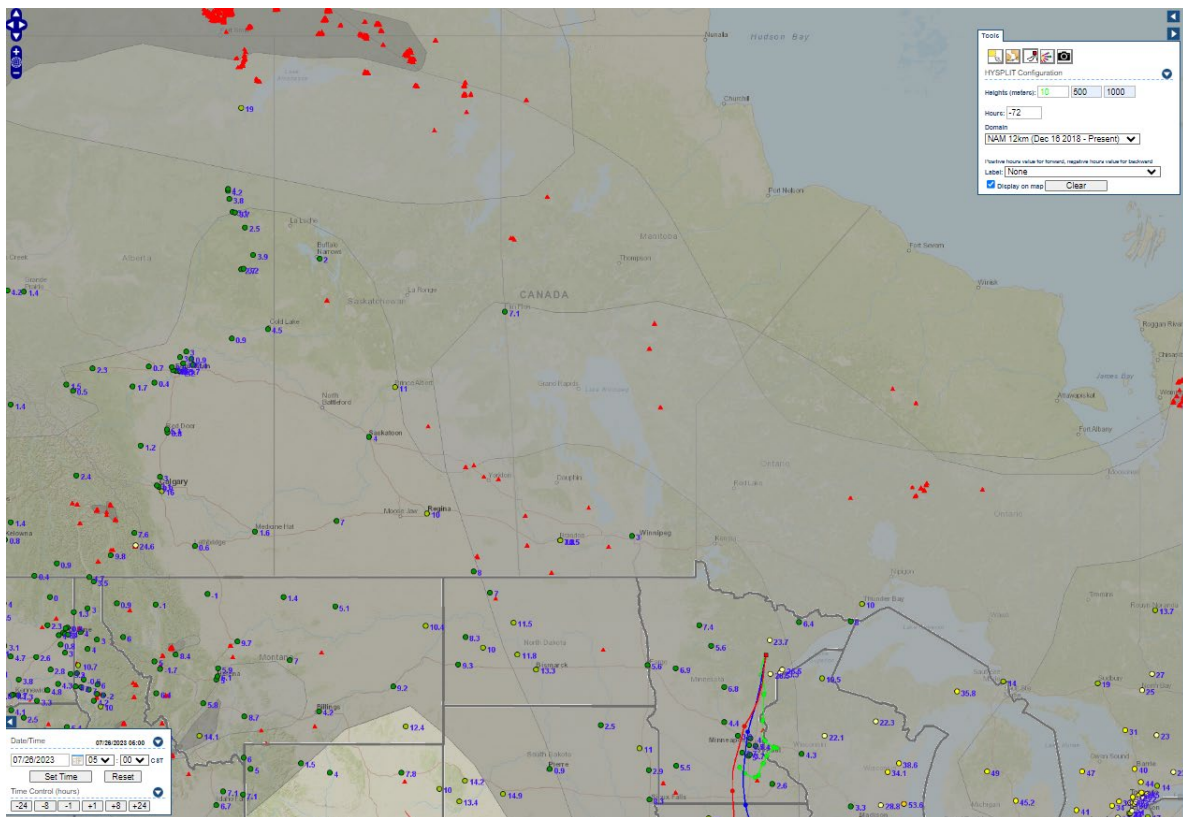
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Fond du Lac	270177417	7/26/2023	18.4	28.5	Canada Wildfire Smoke
Virginia	271377001	7/26/2023	17.3	24.9	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 26, 2023.



MODIS visible satellite for July 26, 2023.



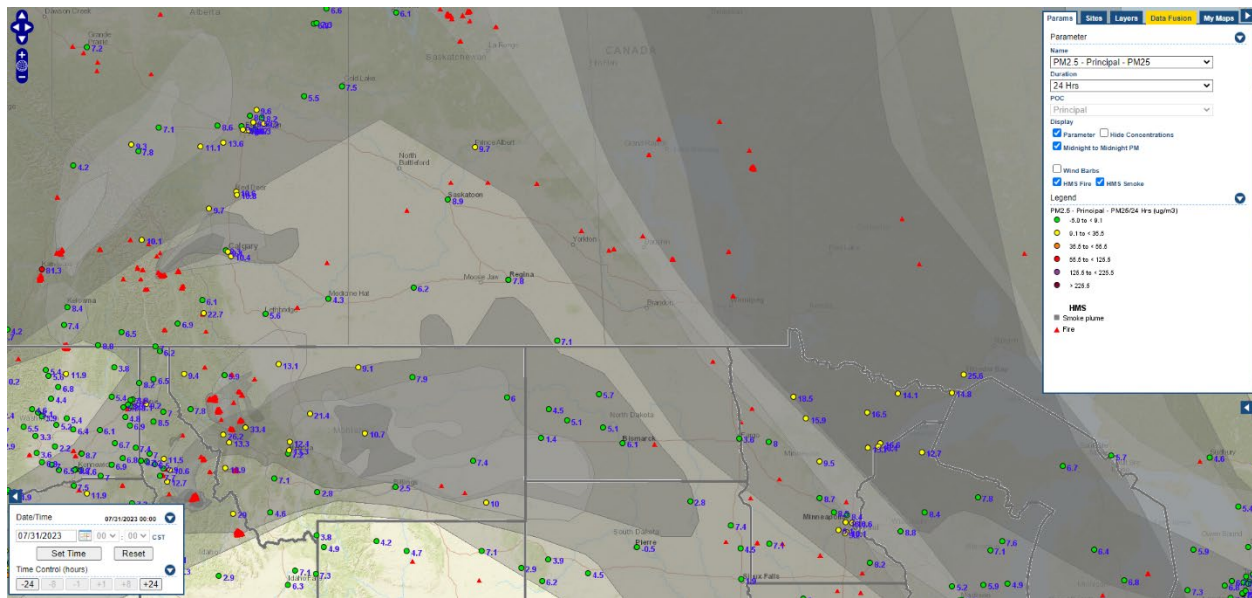
Backward trajectories for July 26, 2023.

7/31/2023 Impacts

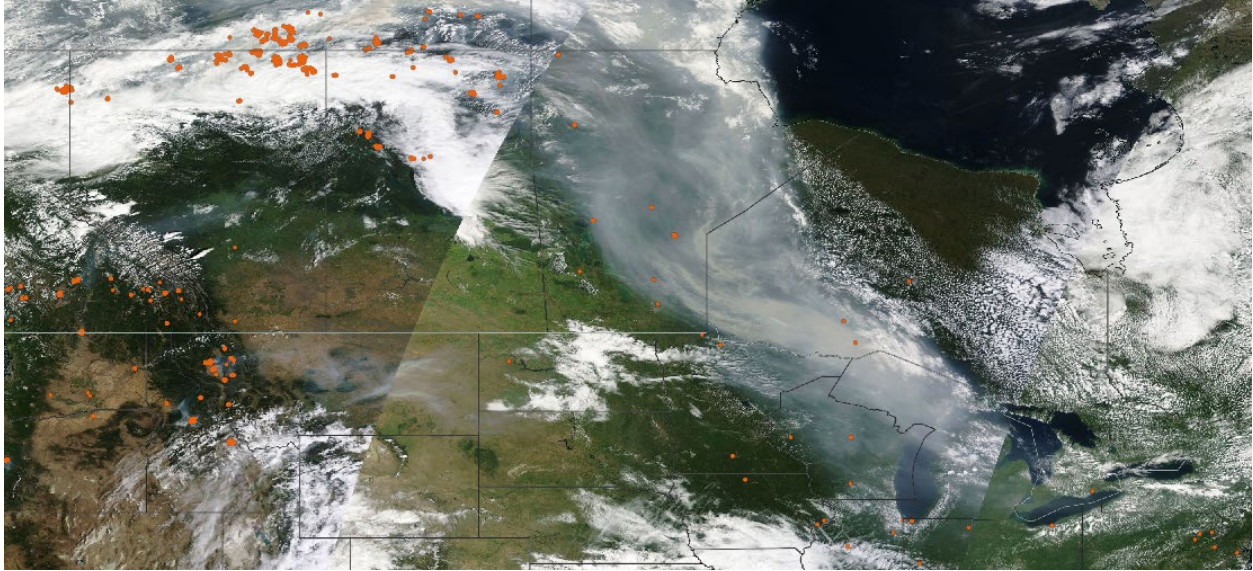
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 31, 2023.

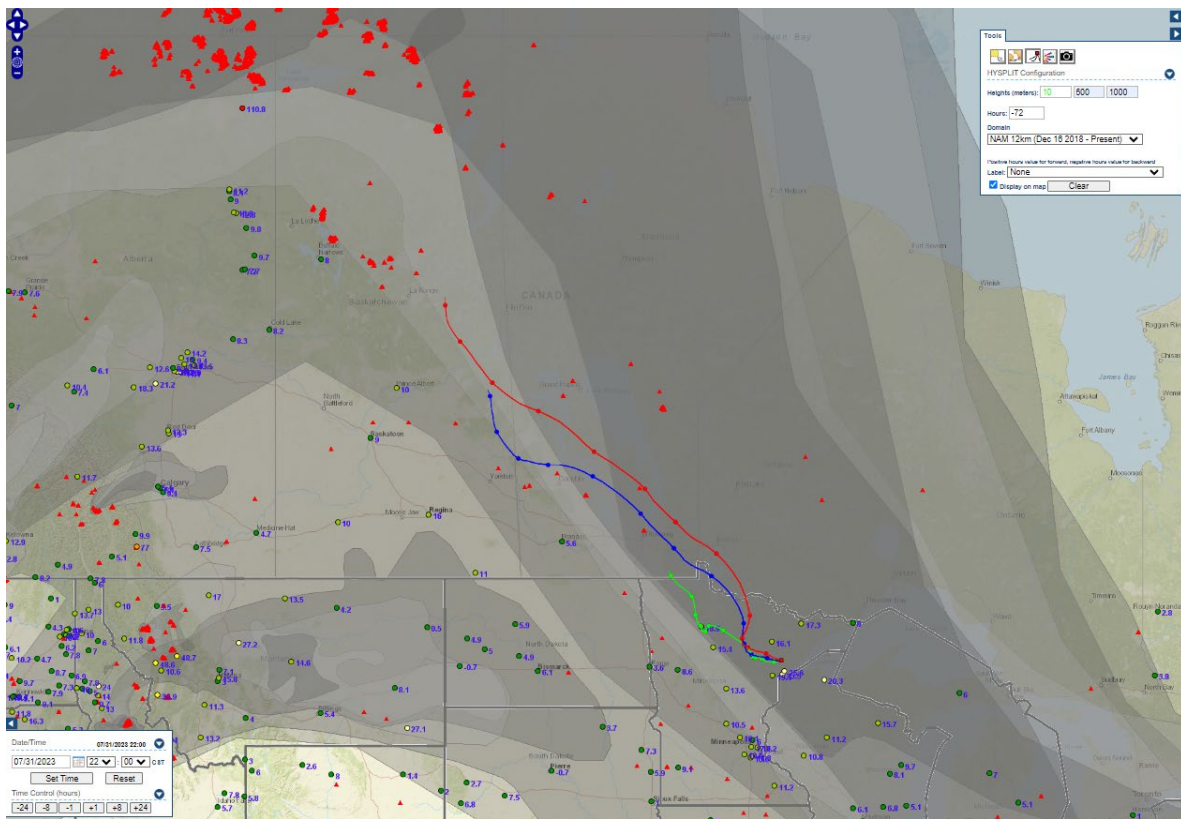
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Red Lake Nation	270072304	7/31/2023	18.5	31.5	Canada Wildfire Smoke
West Duluth	271377554	7/31/2023	16.5	37	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 31, 2023.



MODIS visible satellite for July 31, 2023.



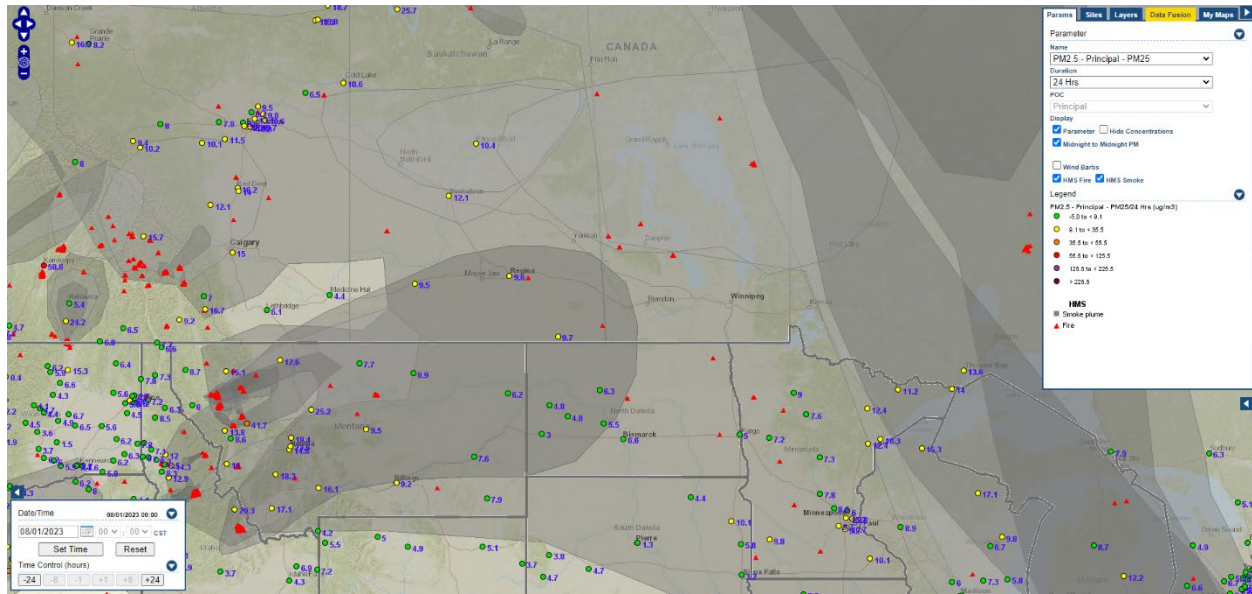
Backward trajectories for July 31, 2023.

8/1/2023 Impacts

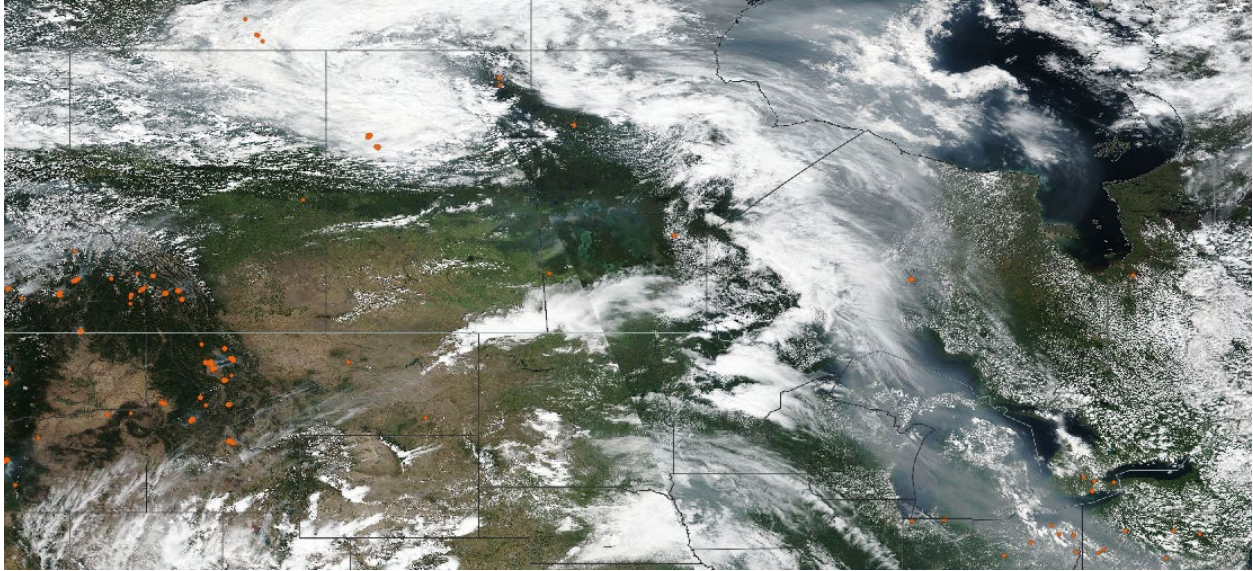
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 1, 2023.

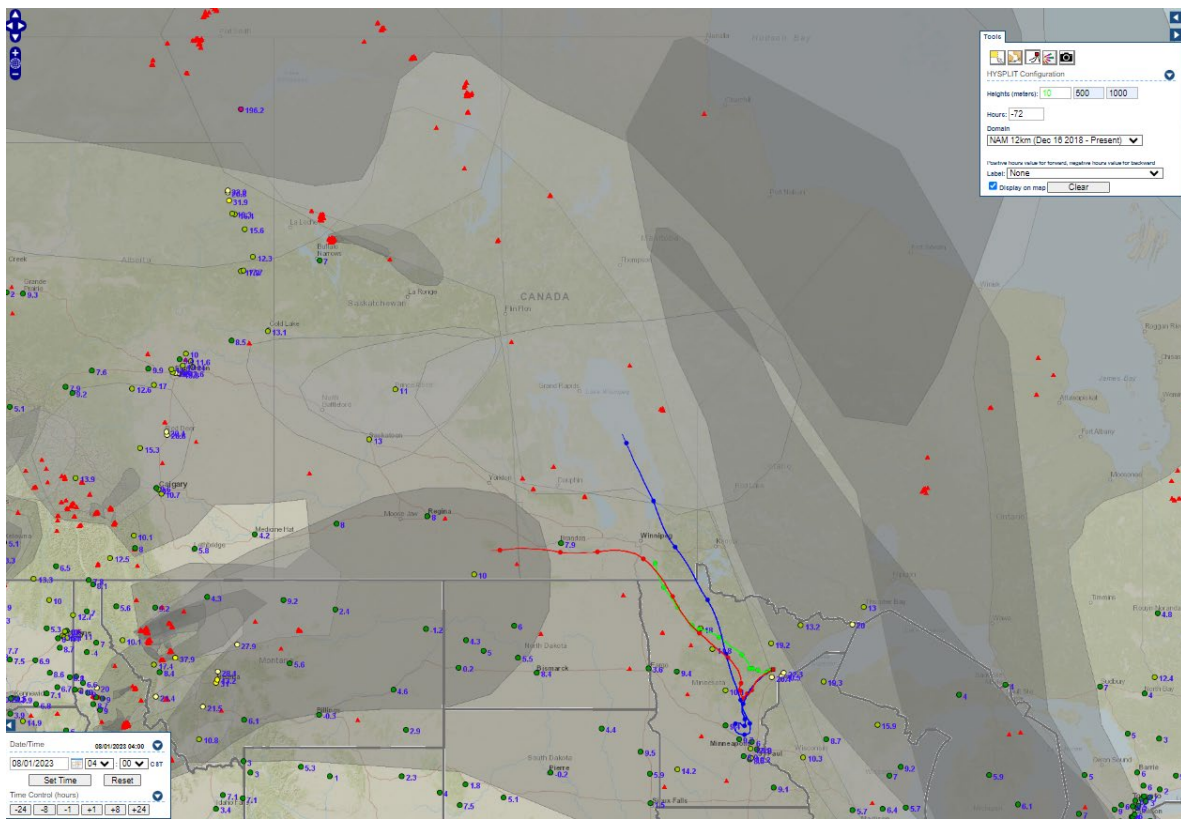
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Duluth-WDSE	271377550	8/1/2023	18.4	25.3	Canada Wildfire Smoke
West Duluth	271377554	8/1/2023	20.8	22.7	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 1, 2023.



MODIS visible satellite for August 1, 2023.



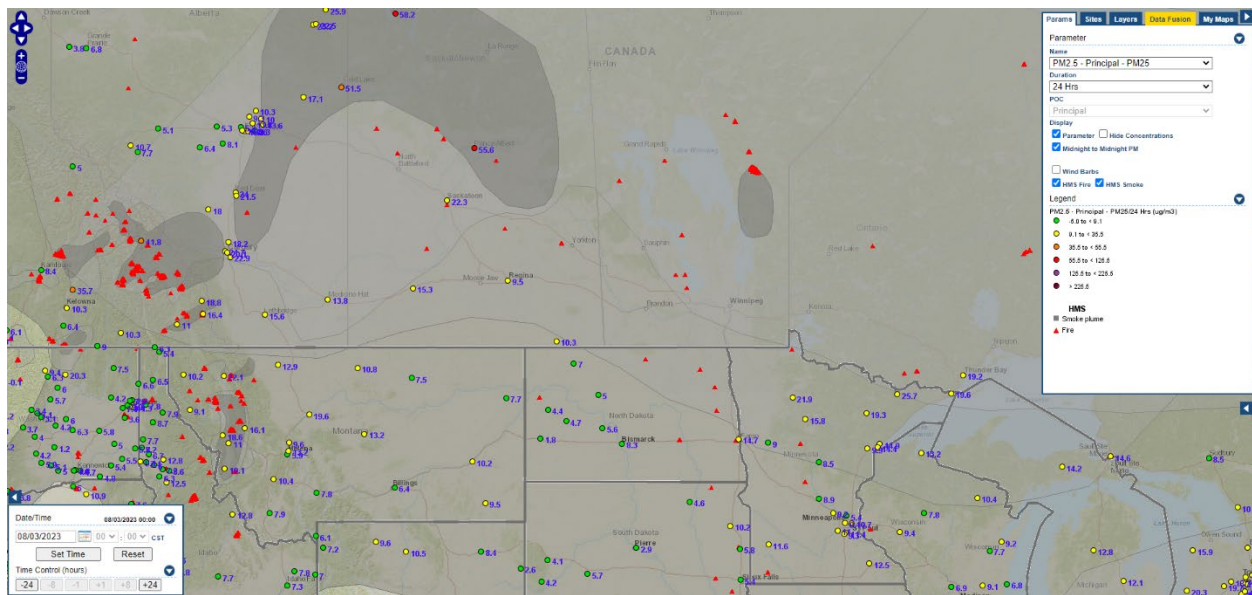
Backward trajectories for August 1, 2023.

8/3/2023 Impacts

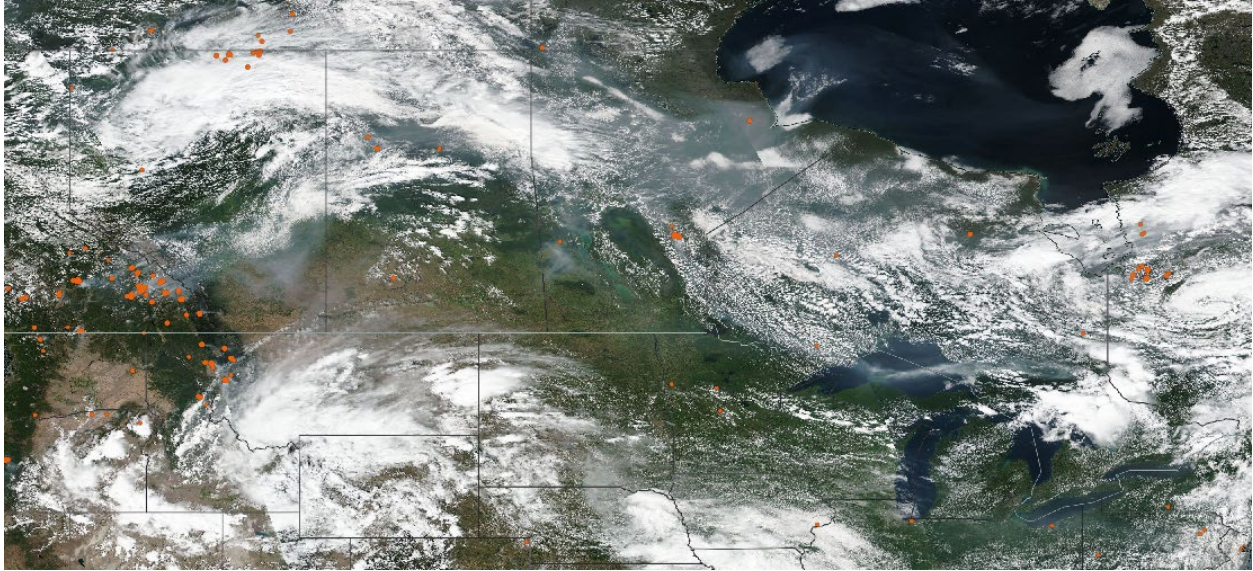
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 3, 2023.

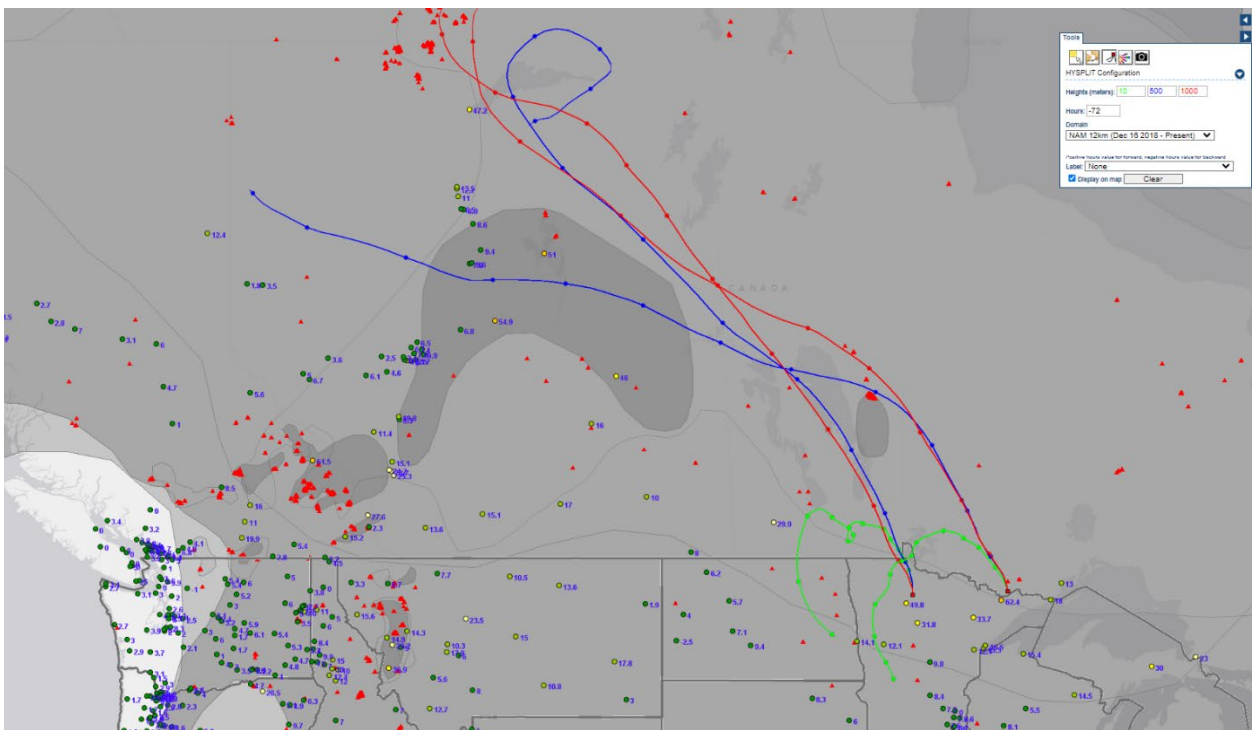
Site	Site AQS	Date (LST)	Daily average (µg/m3)	Max hour (µg/m3)	Notes
Ely	270750005	8/3/2023	25.7	62.4	Canada Wildfire Smoke
Grand Portage	270317810	8/3/2023	19.7	56	Canada Wildfire Smoke
Red Lake Nation	270072304	8/3/2023	21.9	51.9	Canada Wildfire Smoke
Virginia	271377001	8/3/2023	19.3	40.5	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 3, 2023.



MODIS visible satellite for August 3, 2023.



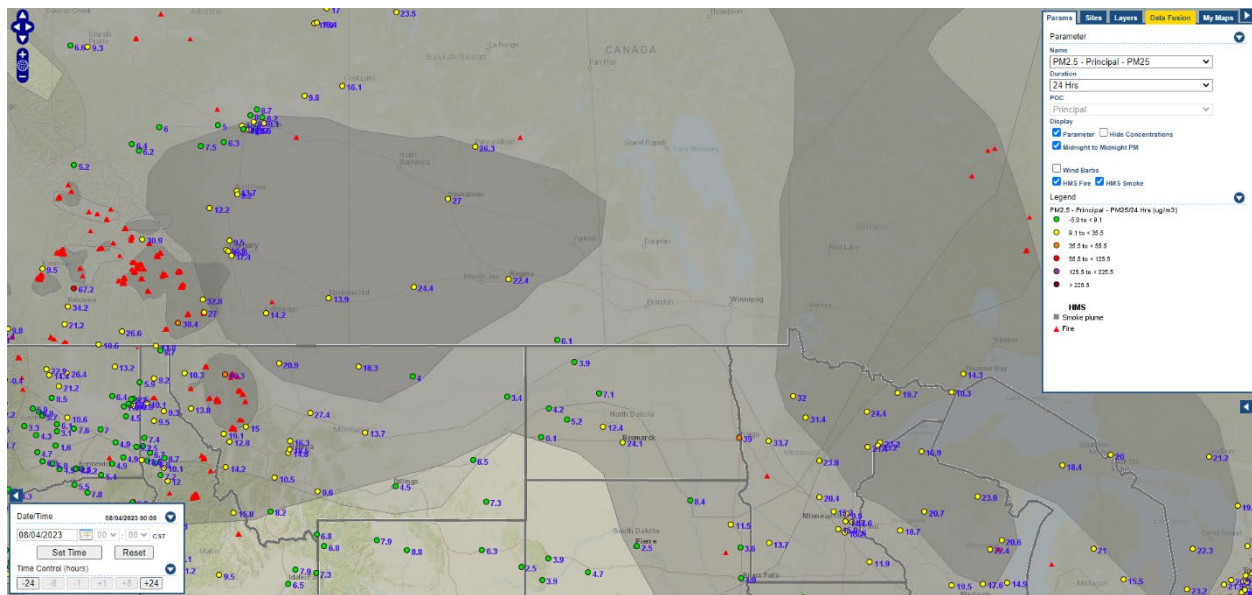
Backward trajectories for August 3, 2023.

8/4/2023 Impacts

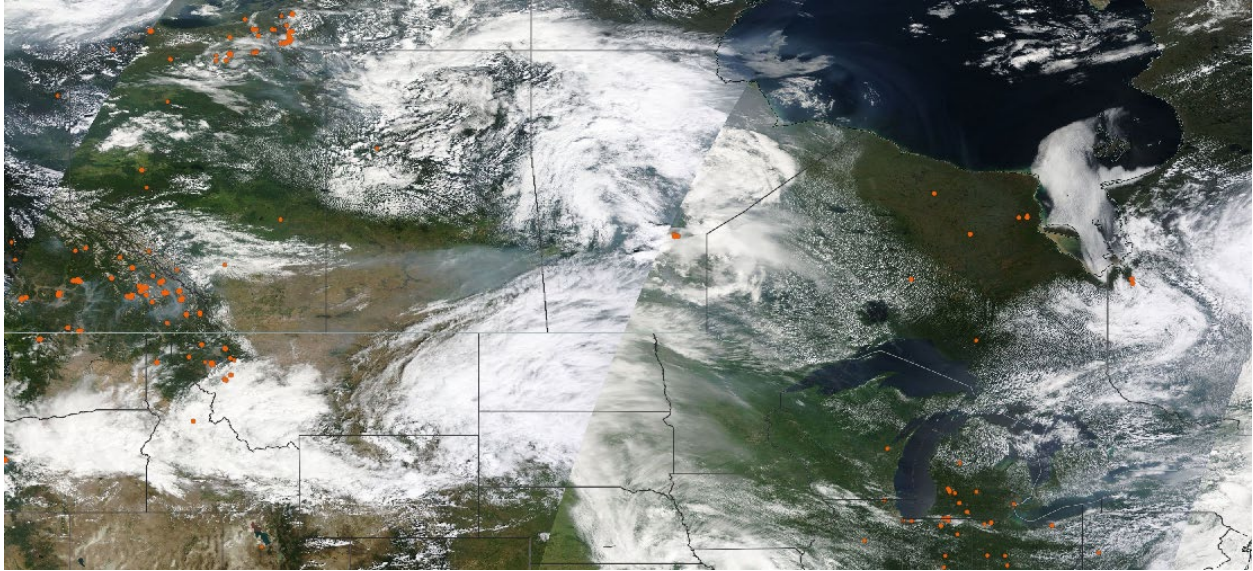
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 4, 2023.

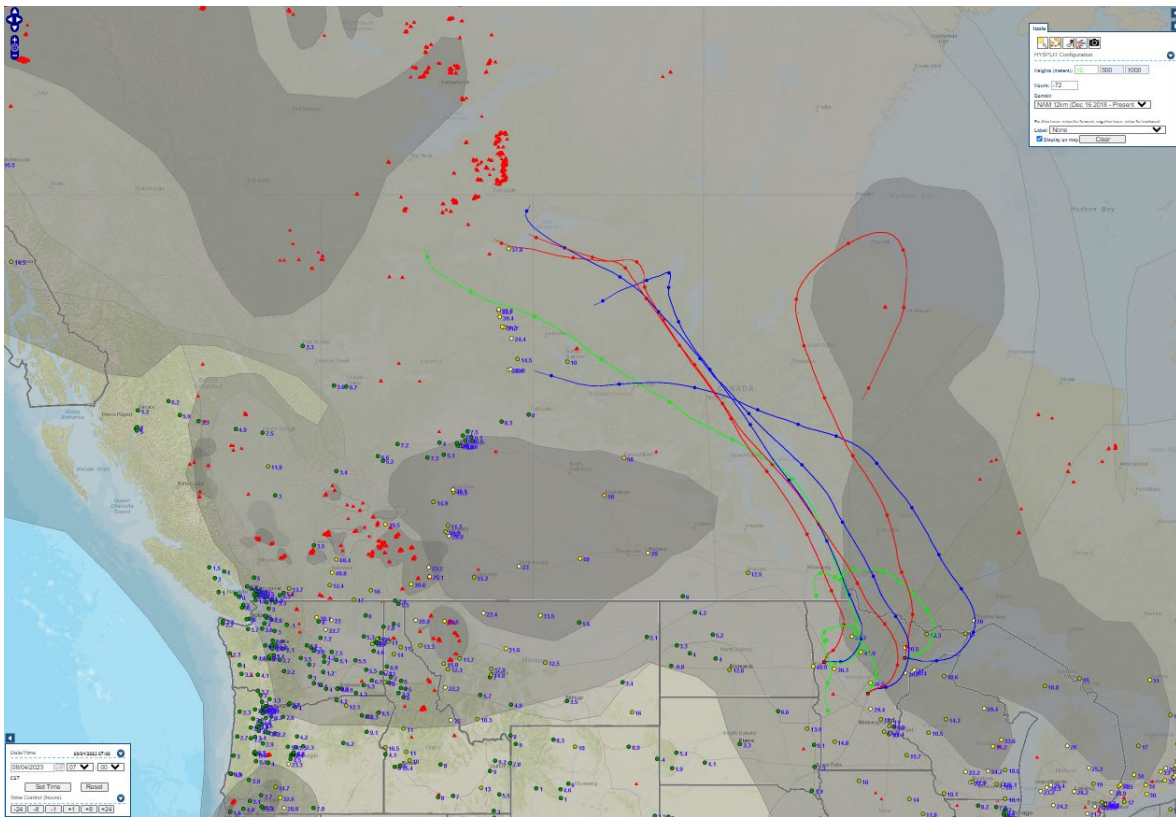
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Brainerd	270353204	8/4/2023	23.8	36.9	Canada Wildfire Smoke
Detroit Lakes	270052013	8/4/2023	33.8	60.1	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/4/2023	23.2	41.8	Canada Wildfire Smoke
Ely	270750005	8/4/2023	19.7	27.1	Canada Wildfire Smoke
Fargo NW	380171004	8/4/2023	39.1	47	Canada Wildfire Smoke
Fond du Lac	270177417	8/4/2023	21.5	27.3	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/4/2023	31.4	42.3	Canada Wildfire Smoke
Red Lake Nation	270072304	8/4/2023	32.1	39.5	Canada Wildfire Smoke
St. Cloud	271453052	8/4/2023	20.5	30.9	Canada Wildfire Smoke
Virginia	271377001	8/4/2023	24.4	41.4	Canada Wildfire Smoke
West Duluth	271377554	8/4/2023	23.2	41.7	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 4, 2023.



MODIS visible satellite for August 4, 2023.



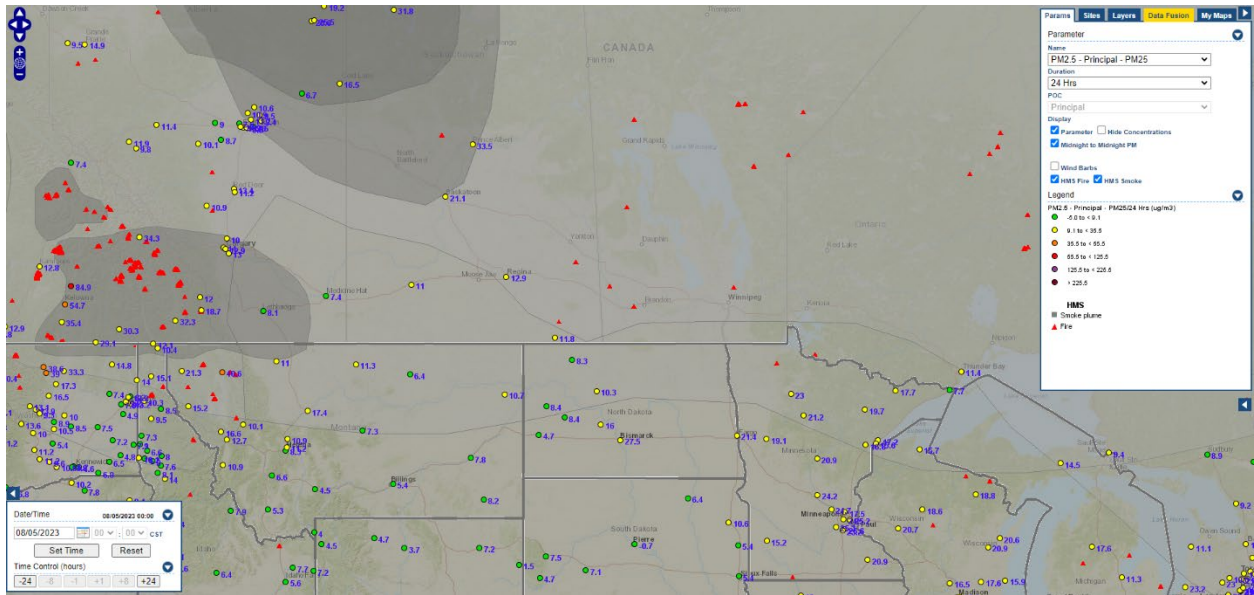
Backward trajectories for August 4, 2023.

8/5/2023 Impacts

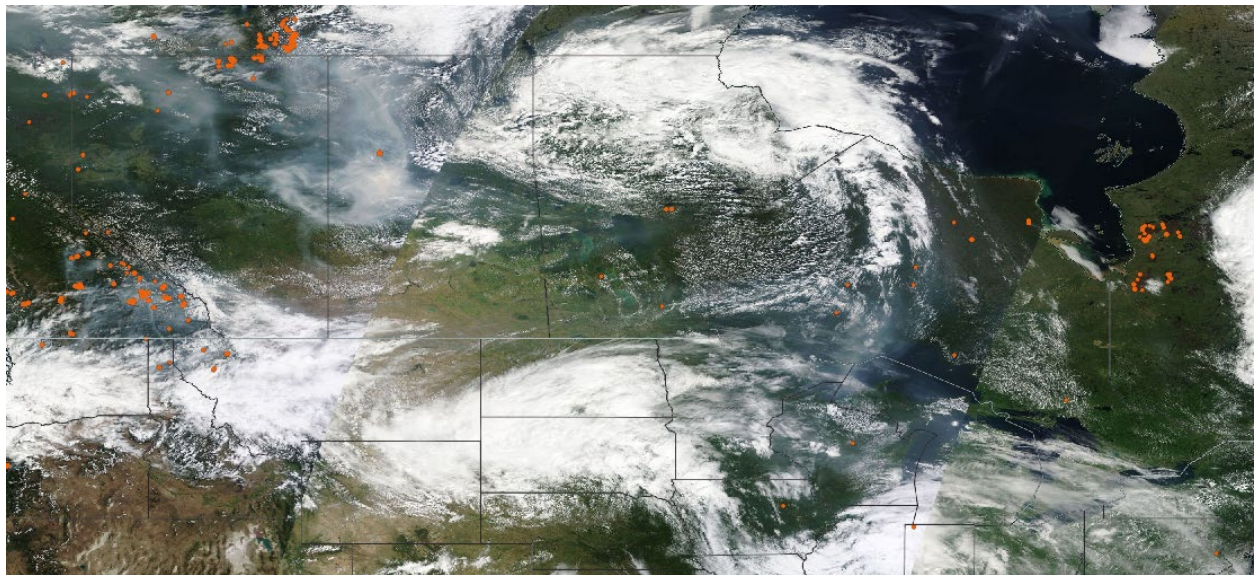
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 5, 2023.

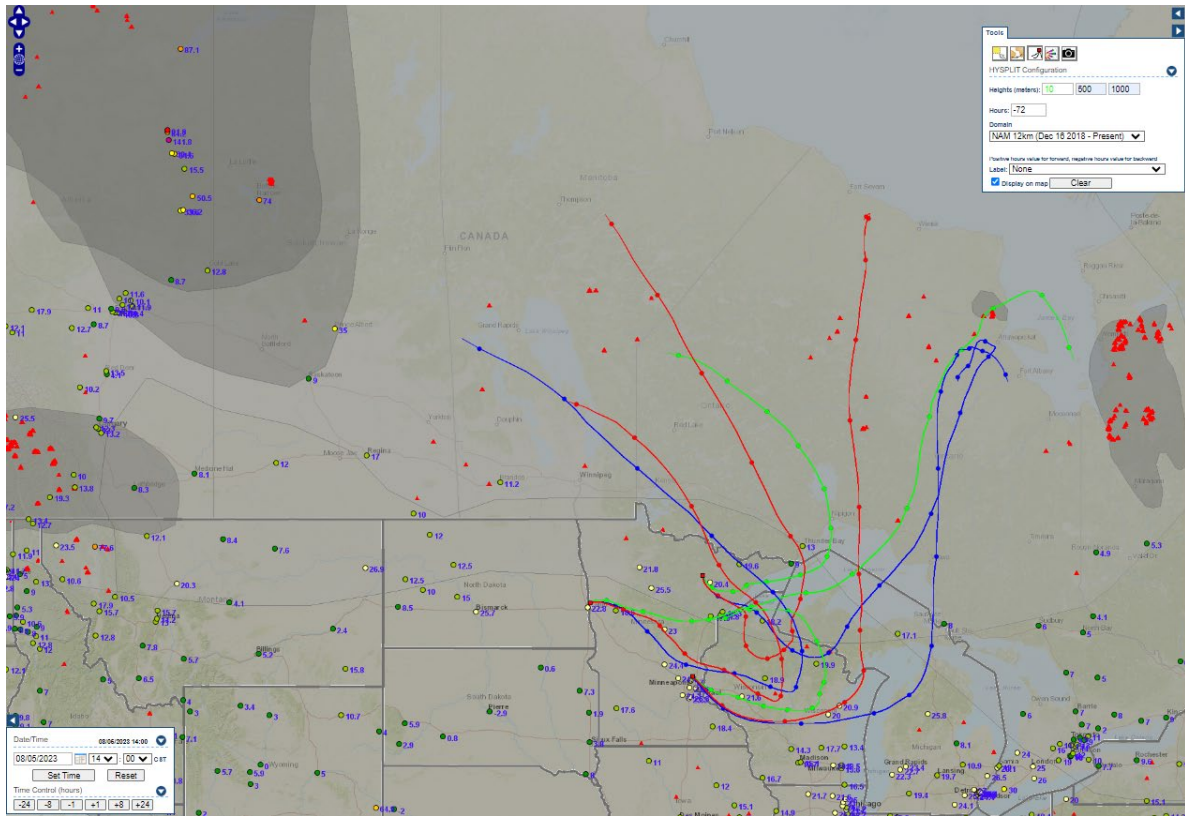
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	8/5/2023	26.6	29.3	Canada Wildfire Smoke
Brainerd	270353204	8/5/2023	20.9	25.3	Canada Wildfire Smoke
Detroit Lakes	270052013	8/5/2023	19.2	25.6	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/5/2023	17.2	22.5	Canada Wildfire Smoke
Ely	270750005	8/5/2023	17.8	25.3	Canada Wildfire Smoke
Fargo NW	380171004	8/5/2023	21.5	34	Canada Wildfire Smoke
Fond du Lac	270177417	8/5/2023	16.9	22.2	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/5/2023	23.3	25.3	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/5/2023	21.2	25.5	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	8/5/2023	24.5	28.3	Canada Wildfire Smoke
Red Lake Nation	270072304	8/5/2023	23.1	26.7	Canada Wildfire Smoke
Rochester	271095008	8/5/2023	21.0	24.9	Canada Wildfire Smoke
Shakopee	271390505	8/5/2023	25.3	27.9	Canada Wildfire Smoke
St. Cloud	271453052	8/5/2023	24.3	28.4	Canada Wildfire Smoke
St. Michael	271713201	8/5/2023	24.8	27.9	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/5/2023	25.3	28.5	Canada Wildfire Smoke
Virginia	271377001	8/5/2023	19.7	24.4	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 5, 2023.



MODIS visible satellite for August 5, 2023.



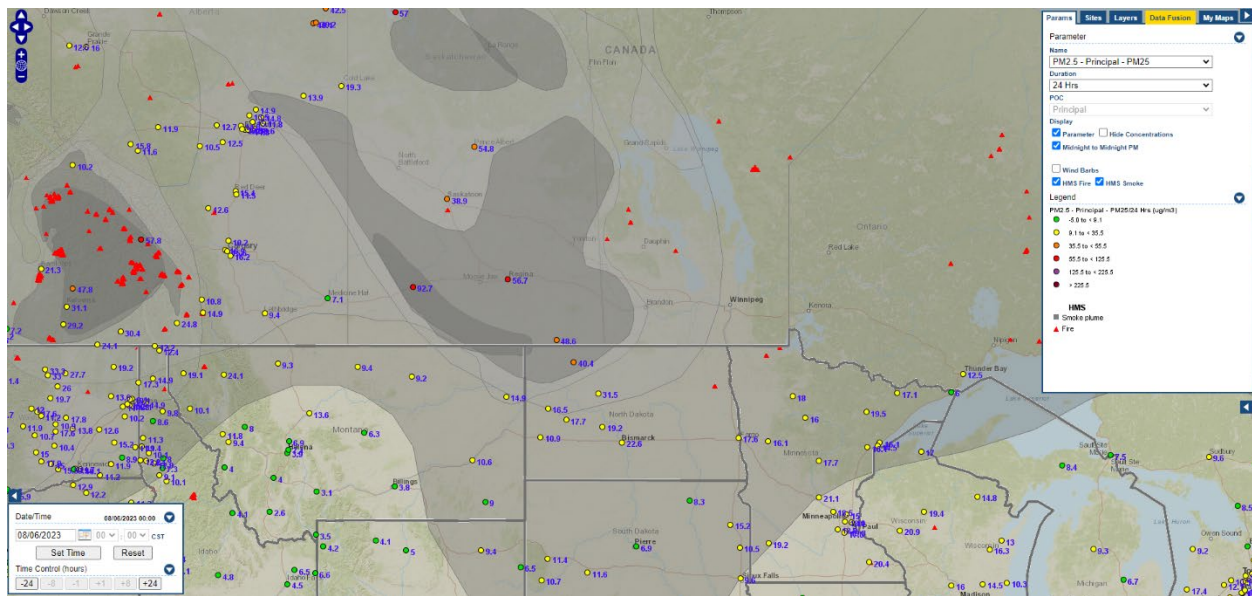
Backward trajectories for August 5, 2023.

8/6/2023 Impacts

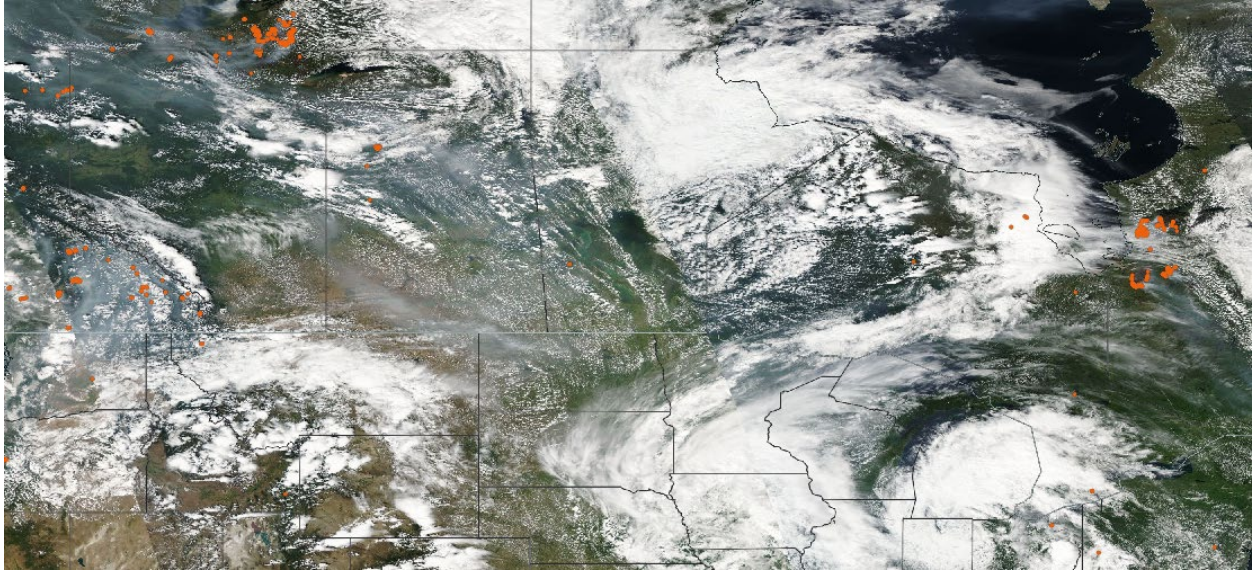
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 6, 2023.

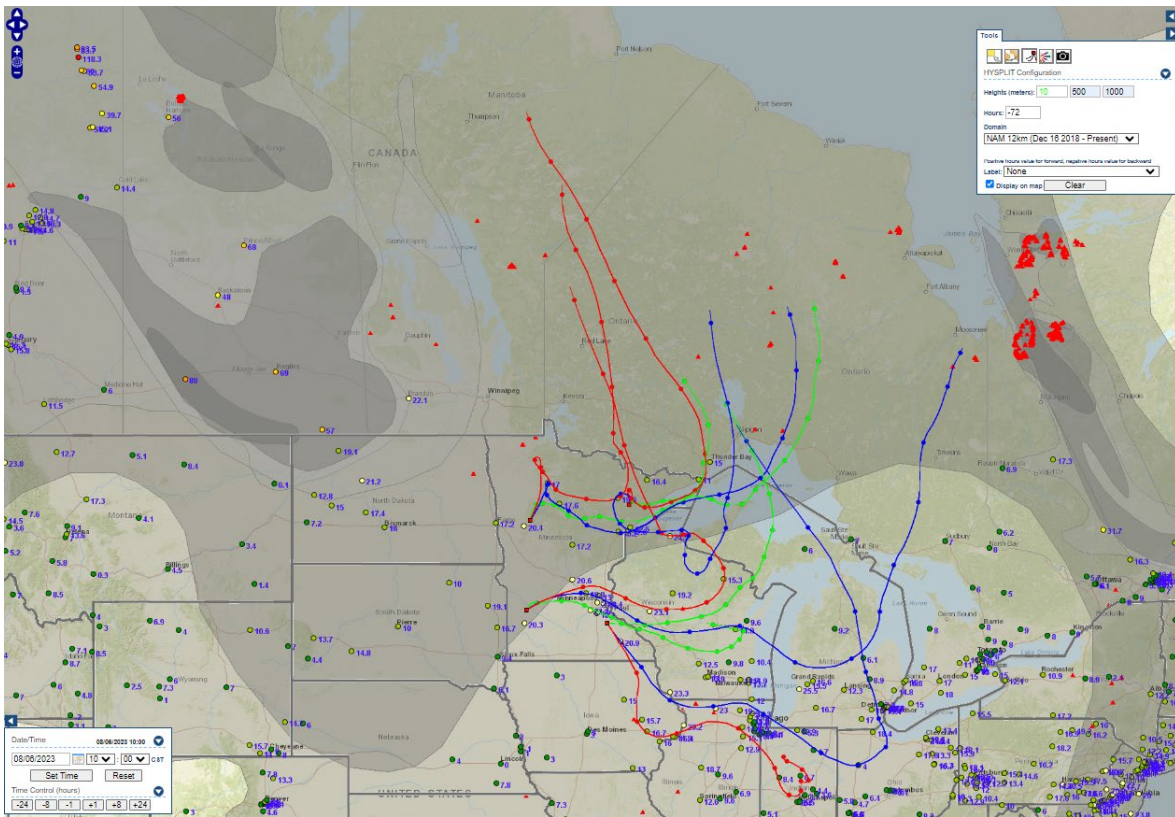
Site	Site AQS	Date (LST)	Daily average (µg/m3)	Max hour (µg/m3)	Notes
Apple Valley	270370470	8/6/2023	19.4	22.7	Canada Wildfire Smoke
Ely	270750005	8/6/2023	17.1	22.5	Canada Wildfire Smoke
Fond du Lac	270177417	8/6/2023	16.1	18.7	Canada Wildfire Smoke
Marshall	270834210	8/6/2023	19.3	22.4	Canada Wildfire Smoke
Red Lake Nation	270072304	8/6/2023	18.0	23.7	Canada Wildfire Smoke
Rochester	271095008	8/6/2023	20.5	22.1	Canada Wildfire Smoke
St. Cloud	271453052	8/6/2023	21.2	26.1	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/6/2023	19.1	23	Canada Wildfire Smoke
Virginia	271377001	8/6/2023	19.6	25.8	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 6, 2023.



MODIS visible satellite for August 6, 2023.



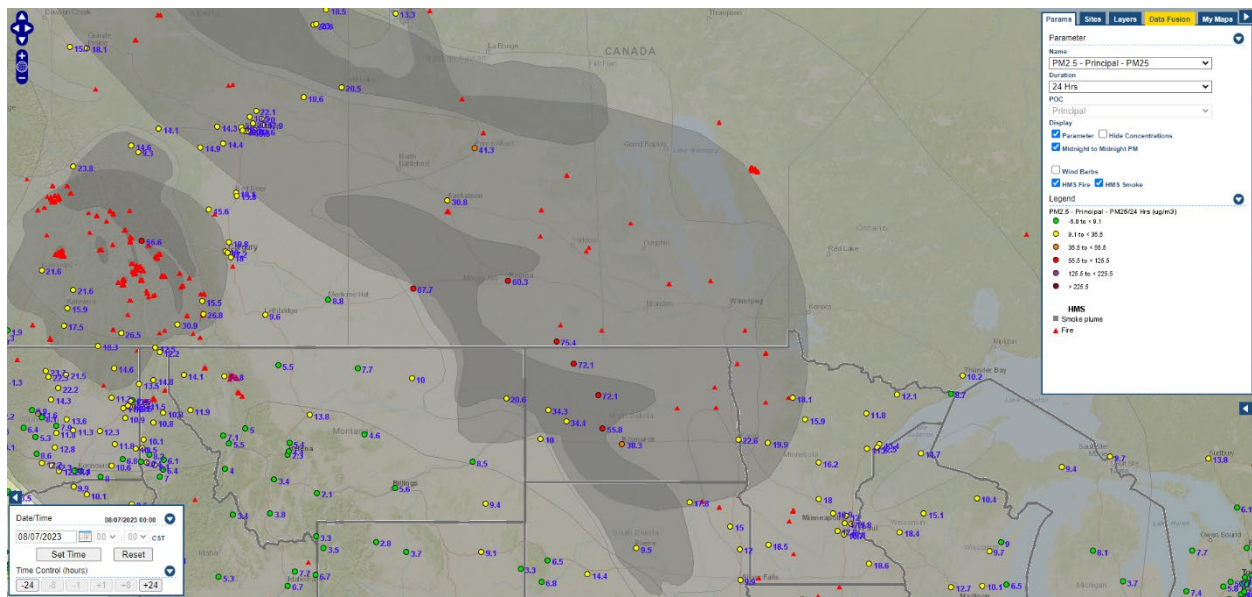
Backward trajectories for August 6, 2023.

8/7/2023 Impacts

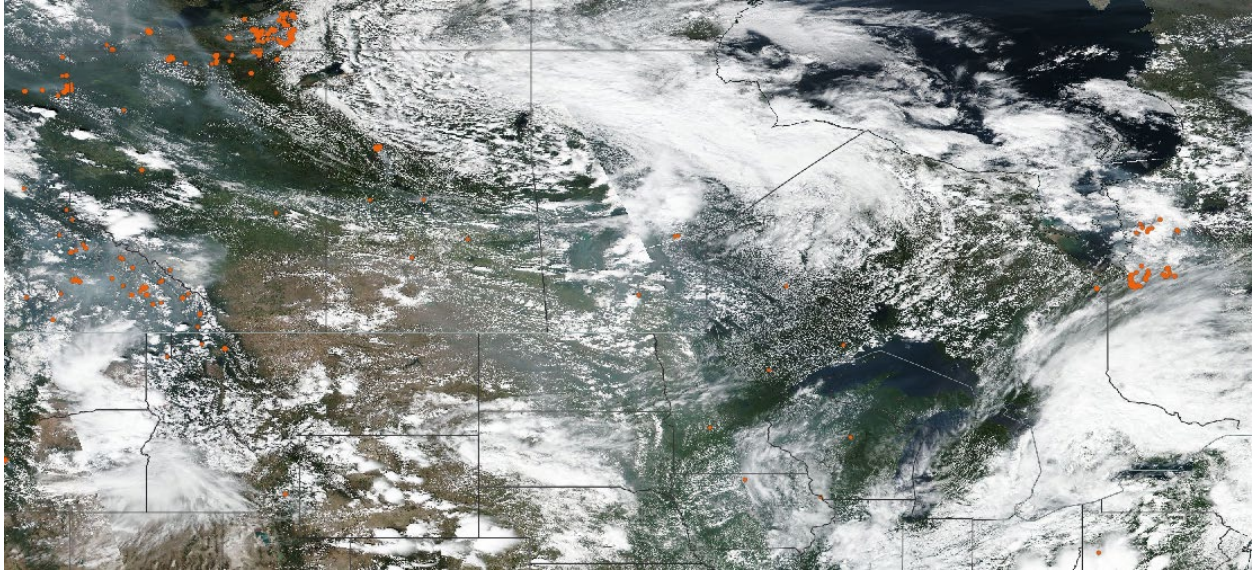
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 7, 2023.

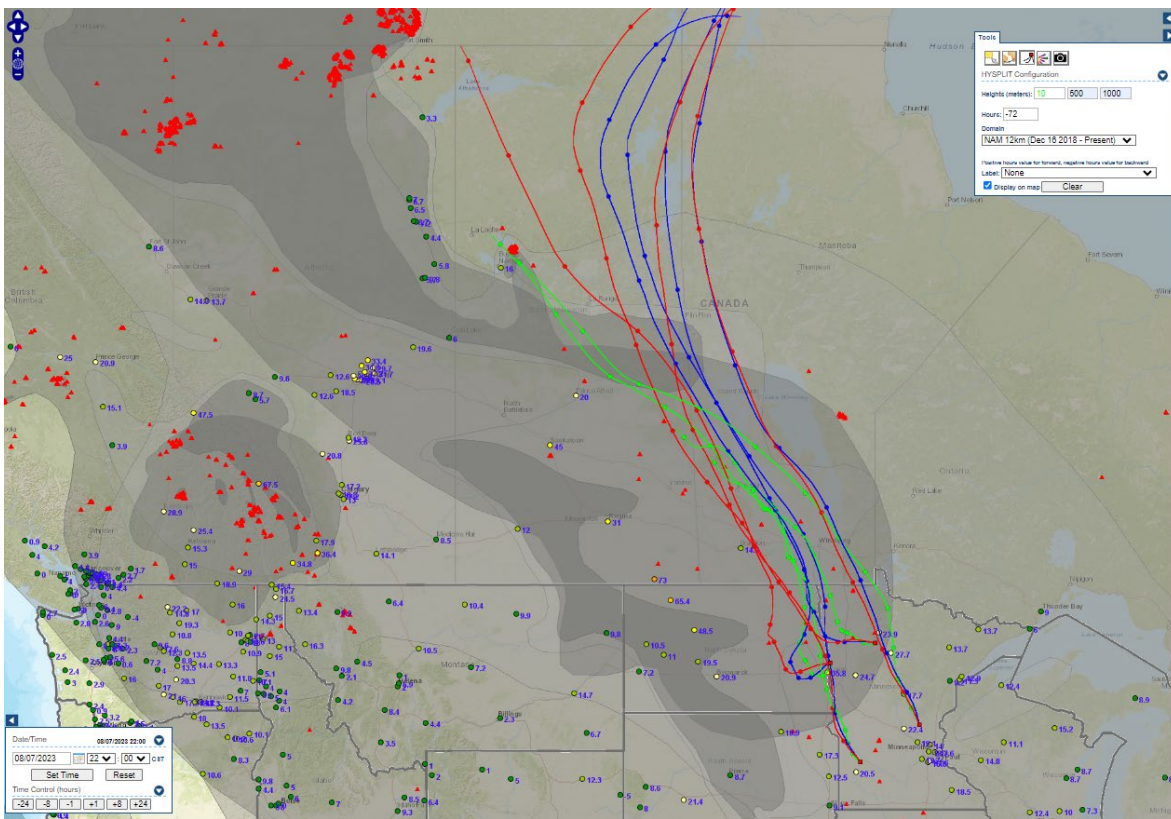
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	8/7/2023	19.4	22.3	Canada Wildfire Smoke
Detroit Lakes	270052013	8/7/2023	20.0	27.6	Canada Wildfire Smoke
Fargo NW	380171004	8/7/2023	22.6	35.8	Canada Wildfire Smoke
Marshall	270834210	8/7/2023	18.5	21.3	Canada Wildfire Smoke
Red Lake Nation	270072304	8/7/2023	18.1	27.9	Canada Wildfire Smoke
Rochester	271095008	8/7/2023	18.6	20.4	Canada Wildfire Smoke
St. Cloud	271453052	8/7/2023	18.1	23.2	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 7, 2023.



MODIS visible satellite for August 7, 2023.



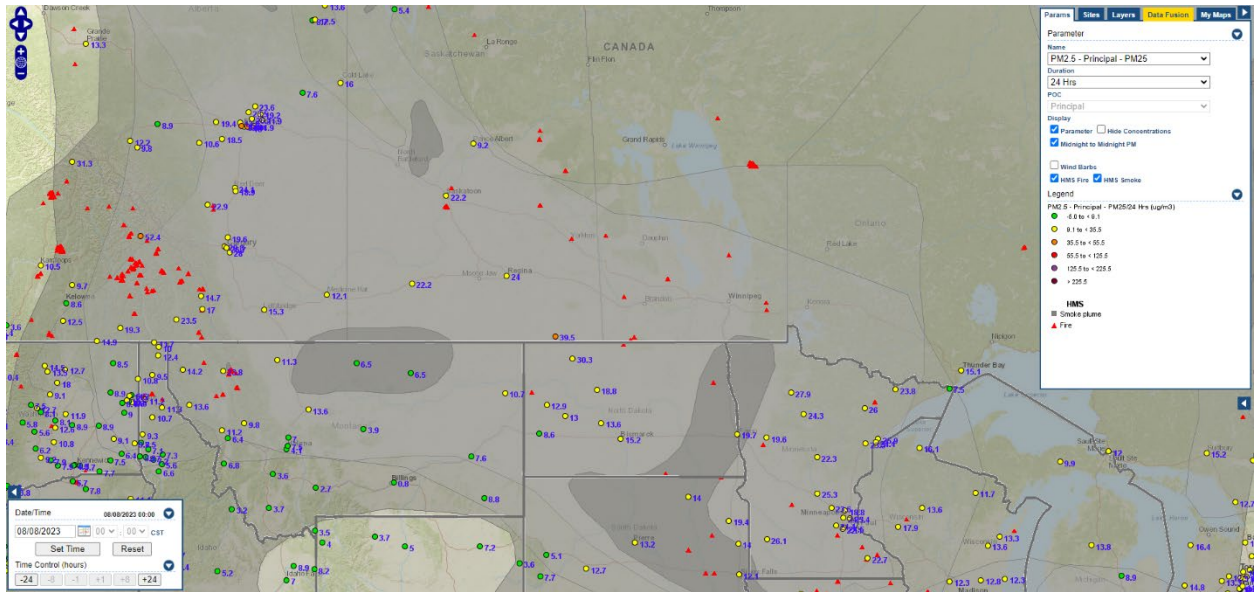
Backward trajectories for August 7, 2023.

8/8/2023 Impacts

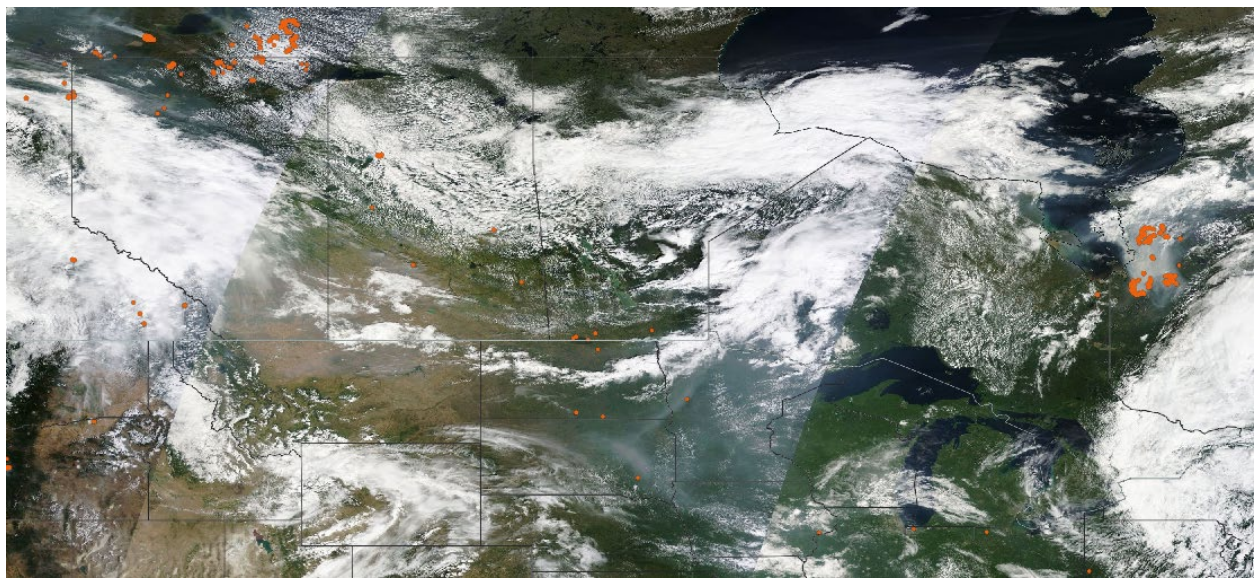
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 8, 2023.

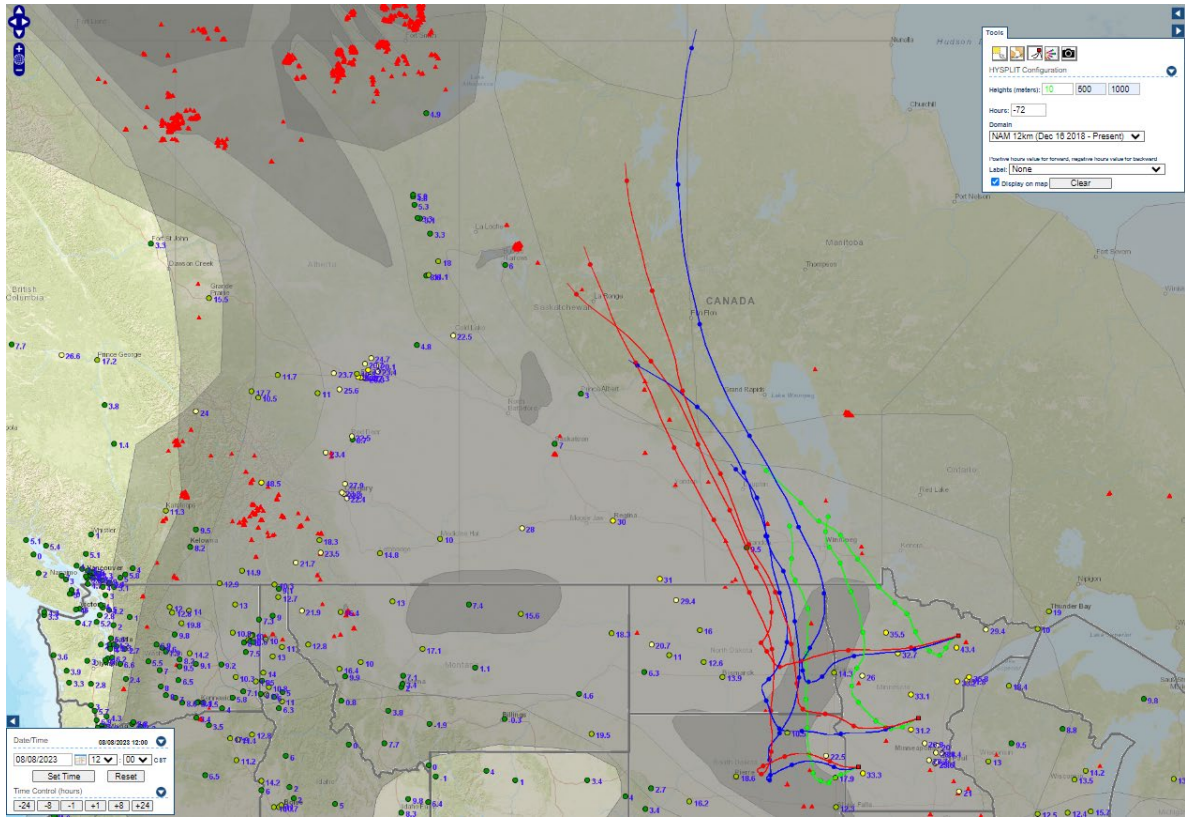
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	8/8/2023	24.5	31	Canada Wildfire Smoke
Brainerd	270353204	8/8/2023	22.3	33.1	Canada Wildfire Smoke
Detroit Lakes	270052013	8/8/2023	19.6	28.8	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/8/2023	25.9	36.7	Canada Wildfire Smoke
Ely	270750005	8/8/2023	23.8	33.3	Canada Wildfire Smoke
Fargo NW	380171004	8/8/2023	19.7	35.6	Canada Wildfire Smoke
Fond du Lac	270177417	8/8/2023	23.4	33.9	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/8/2023	22.2	27.7	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/8/2023	24.3	36.2	Canada Wildfire Smoke
Marshall	270834210	8/8/2023	26.2	33.3	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	8/8/2023	24.6	29.1	Canada Wildfire Smoke
Red Lake Nation	270072304	8/8/2023	27.9	37.8	Canada Wildfire Smoke
Rochester	271095008	8/8/2023	22.7	33.8	Canada Wildfire Smoke
Shakopee	271390505	8/8/2023	24.4	28.7	Canada Wildfire Smoke
St. Cloud	271453052	8/8/2023	25.4	34.4	Canada Wildfire Smoke
St. Michael	271713201	8/8/2023	23.7	27.7	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/8/2023	23.4	28.4	Canada Wildfire Smoke
Virginia	271377001	8/8/2023	26.1	43.6	Canada Wildfire Smoke
West Duluth	271377554	8/8/2023	24.4	34.6	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 8, 2023.



MODIS visible satellite for August 8, 2023.



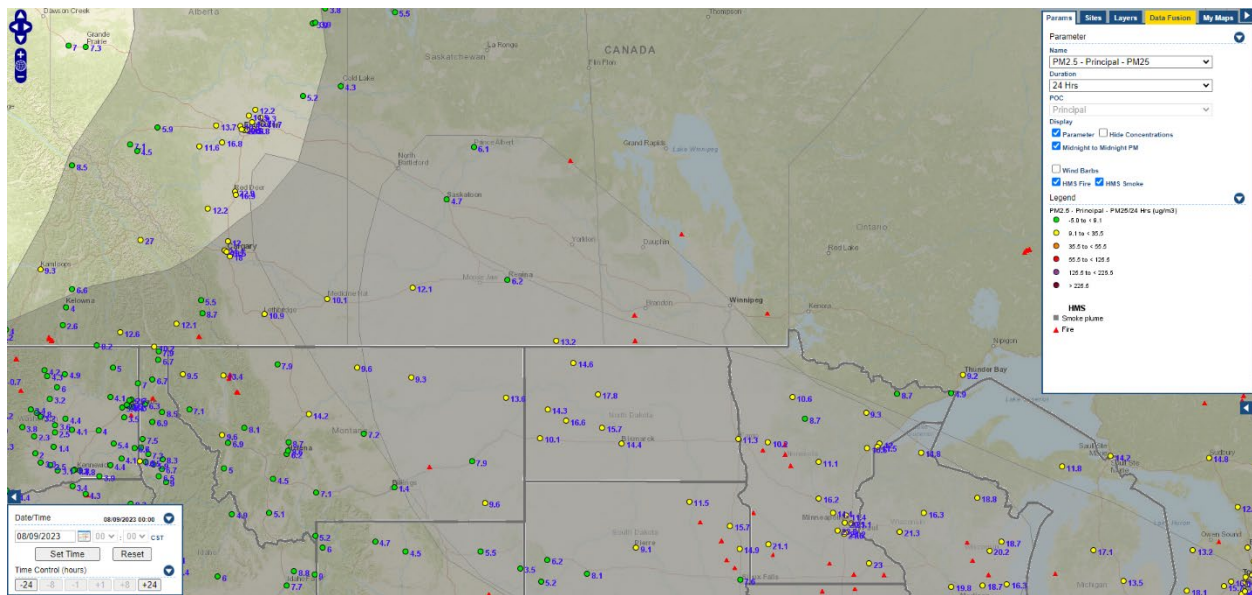
Backward trajectories for August 8, 2023.

8/9/2023 Impacts

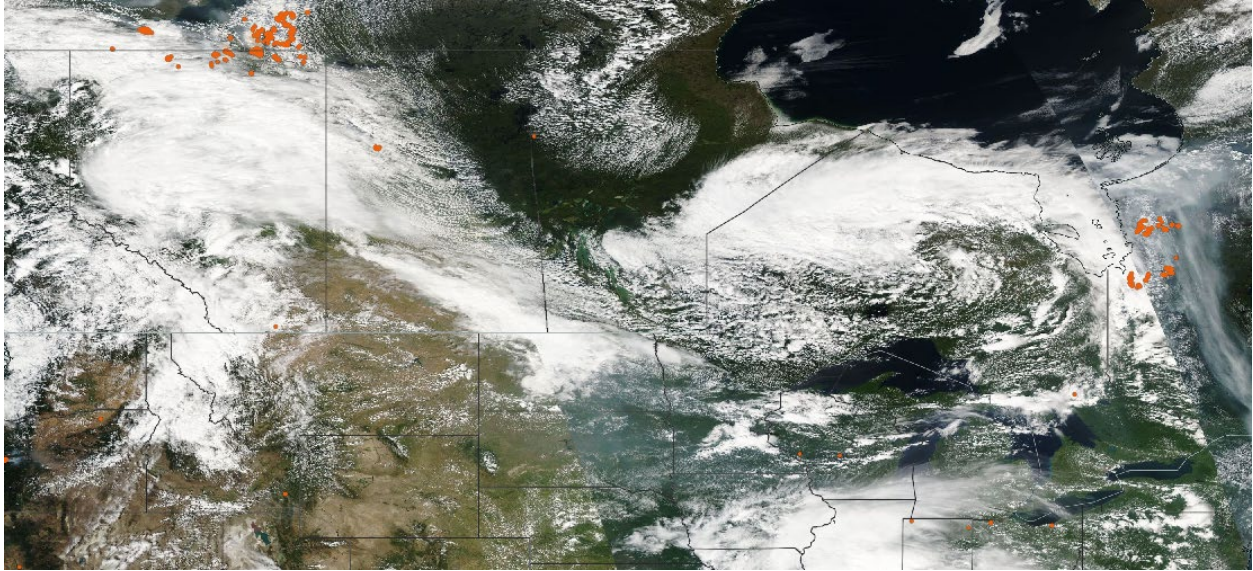
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 9, 2023.

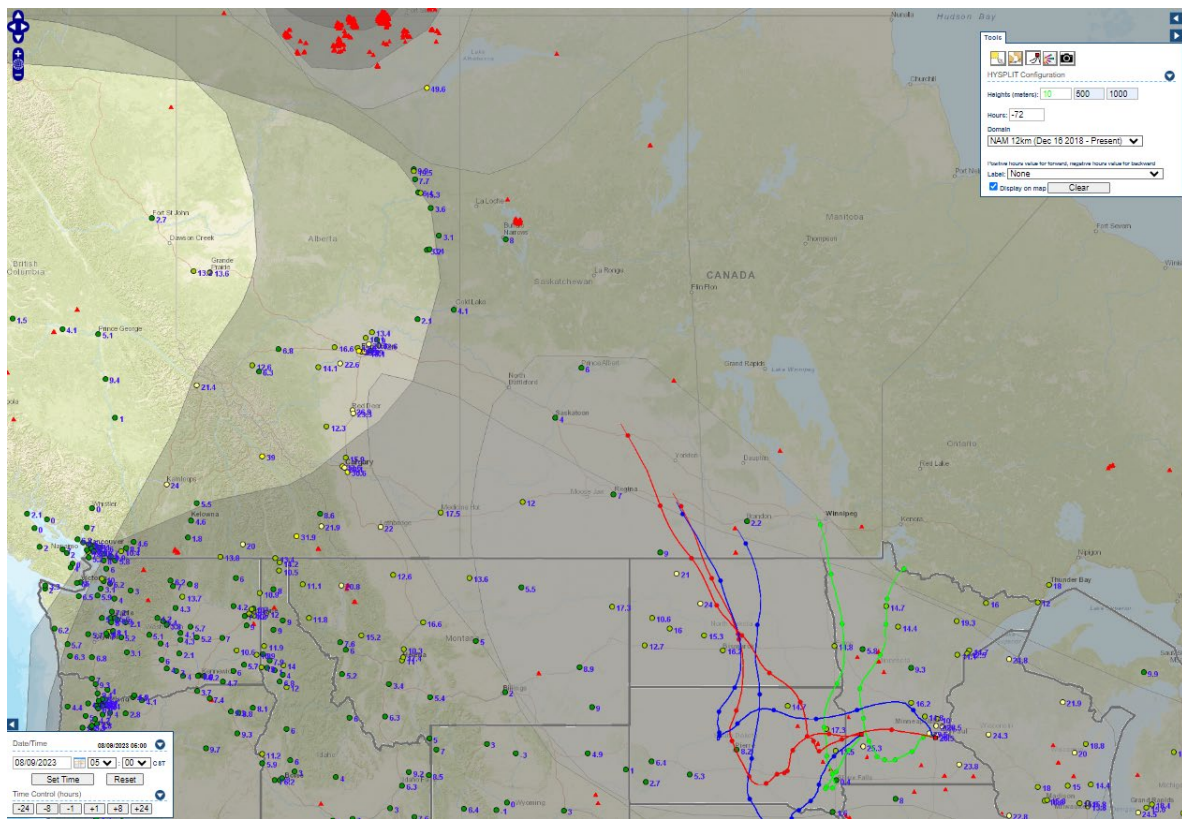
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	8/9/2023	24.3	30.6	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/9/2023	21.7	28.4	Canada Wildfire Smoke
Marshall	270834210	8/9/2023	21.1	26.2	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	8/9/2023	20.3	27.9	Canada Wildfire Smoke
Rochester	271095008	8/9/2023	23.0	30.4	Canada Wildfire Smoke
Shakopee	271390505	8/9/2023	23.8	31.2	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/9/2023	21.1	28	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 9, 2023.



MODIS visible satellite for August 9, 2023.



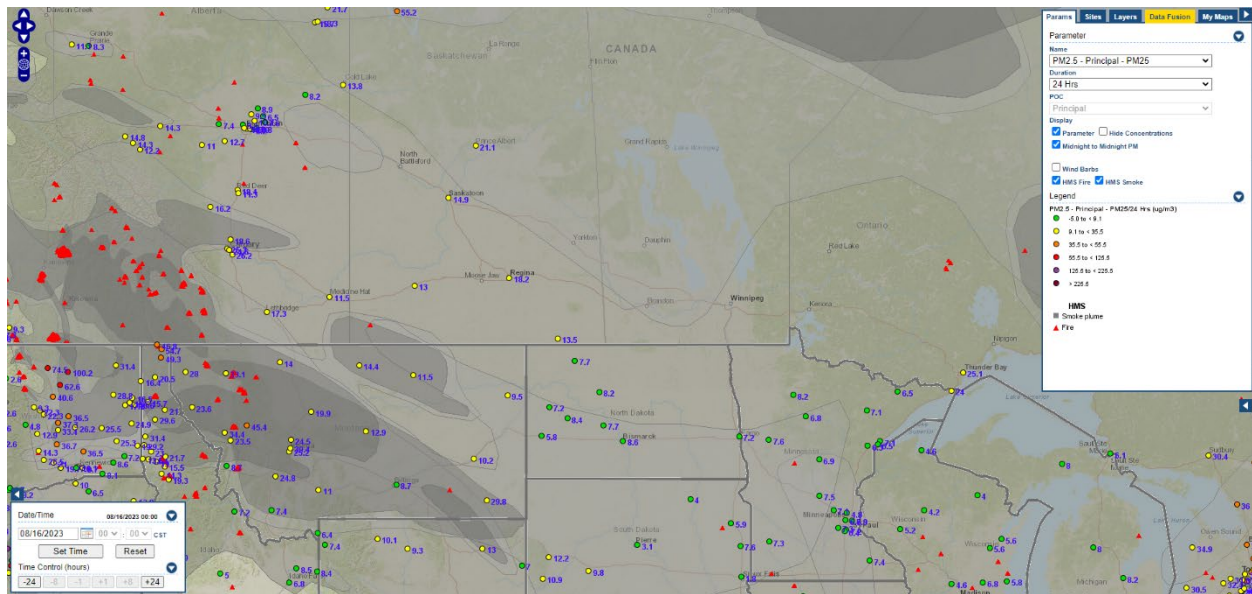
Backward trajectories for August 9, 2023.

8/16/2023 Impacts

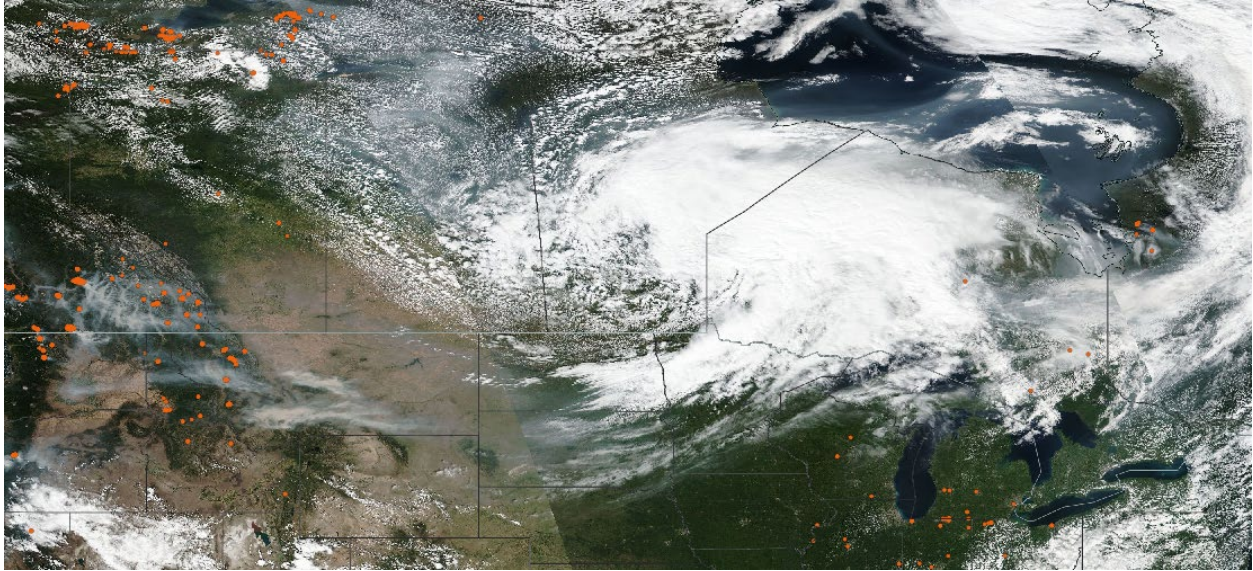
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 16, 2023.

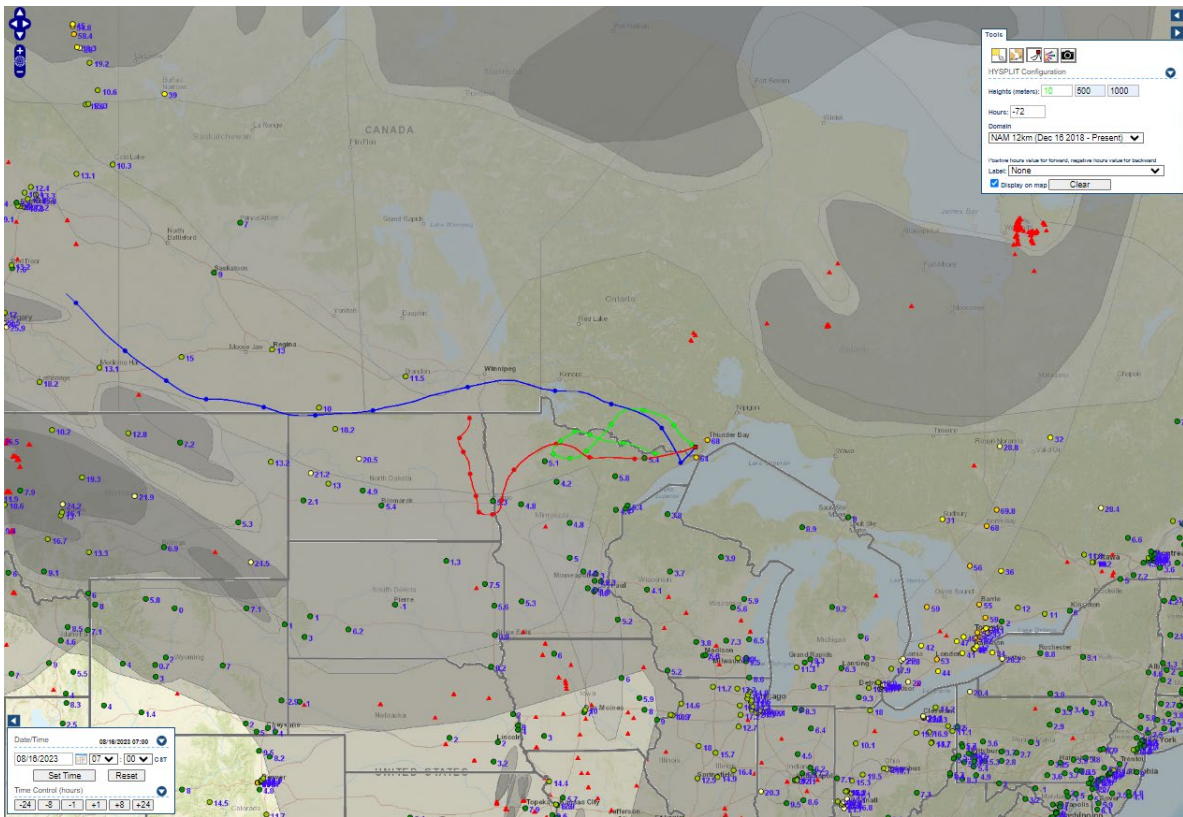
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Grand Portage	270317810	8/16/2023	24.1	65	Possible Malfunction + Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 16, 2023.



MODIS visible satellite for August 16, 2023.



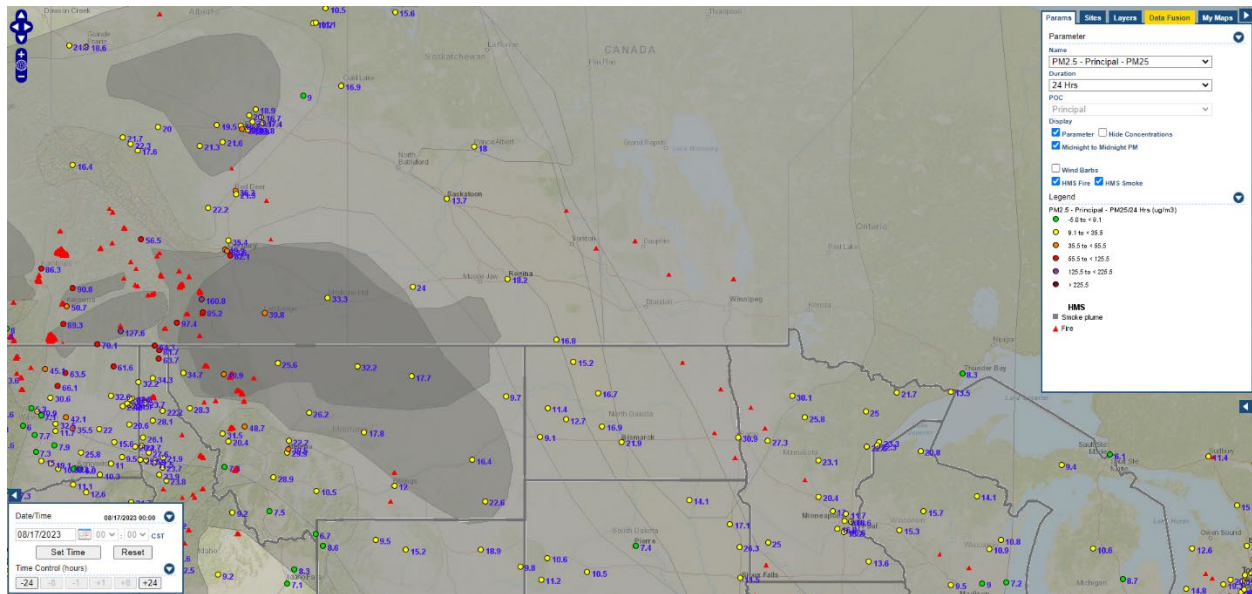
Backward trajectories for August 16, 2023.

8/17/2023 Impacts

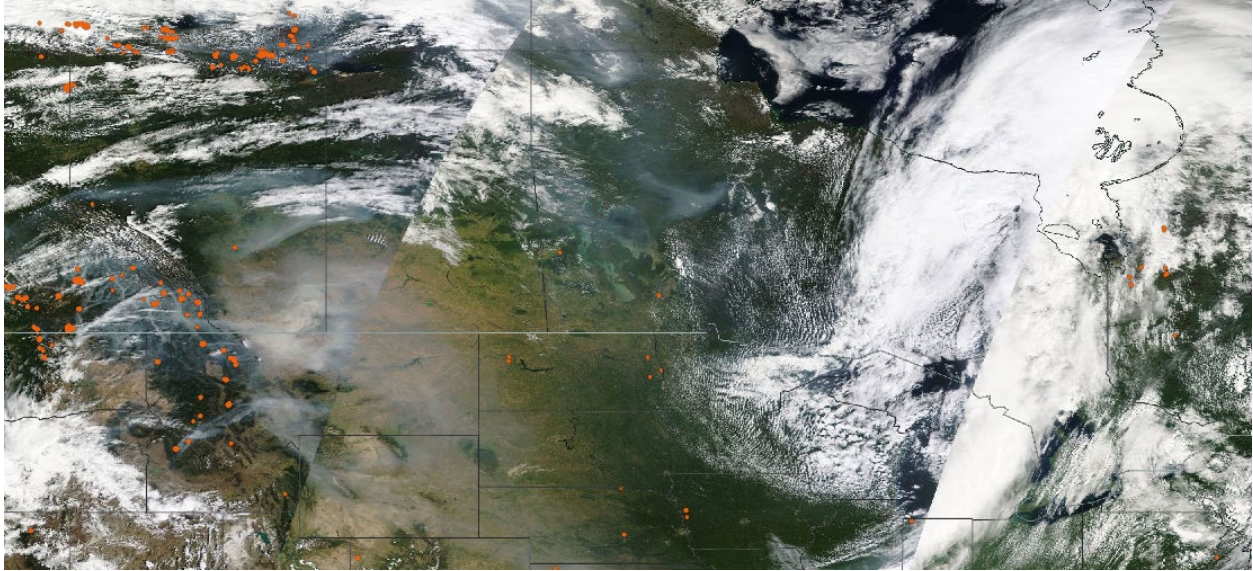
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 17, 2023.

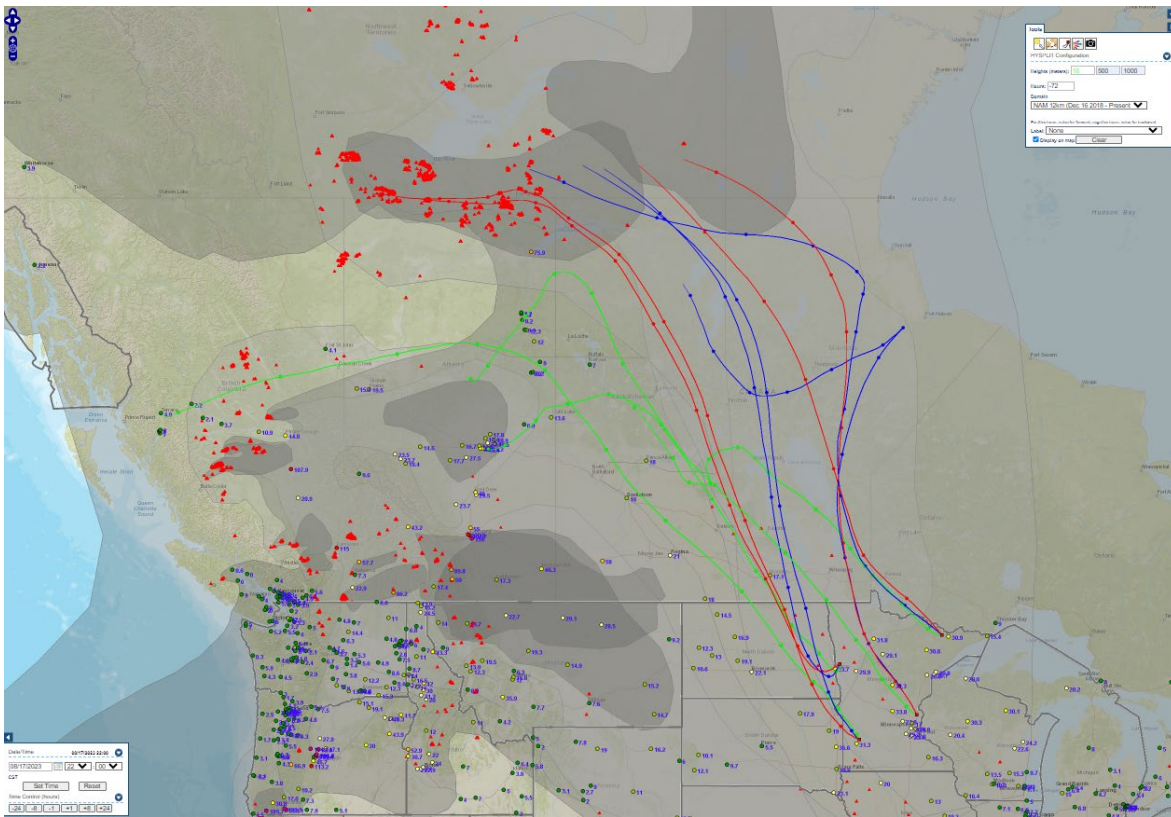
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Brainerd	270353204	8/17/2023	23.2	34.4	Canada Wildfire Smoke
Detroit Lakes	270052013	8/17/2023	27.4	35.8	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/17/2023	23.4	35.2	Canada Wildfire Smoke
Ely	270750005	8/17/2023	21.7	35.2	Canada Wildfire Smoke
Fargo NW	380171004	8/17/2023	30.9	36.4	Canada Wildfire Smoke
Fond du Lac	270177417	8/17/2023	22.7	38.9	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/17/2023	25.9	45.3	Canada Wildfire Smoke
Marshall	270834210	8/17/2023	25.1	37.4	Canada Wildfire Smoke
Red Lake Nation	270072304	8/17/2023	30.2	54.6	Canada Wildfire Smoke
St. Cloud	271453052	8/17/2023	20.5	35.5	Canada Wildfire Smoke
Virginia	271377001	8/17/2023	25.1	40.5	Canada Wildfire Smoke
West Duluth	271377554	8/17/2023	22.3	34.4	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 17, 2023.



MODIS visible satellite for August 17, 2023.



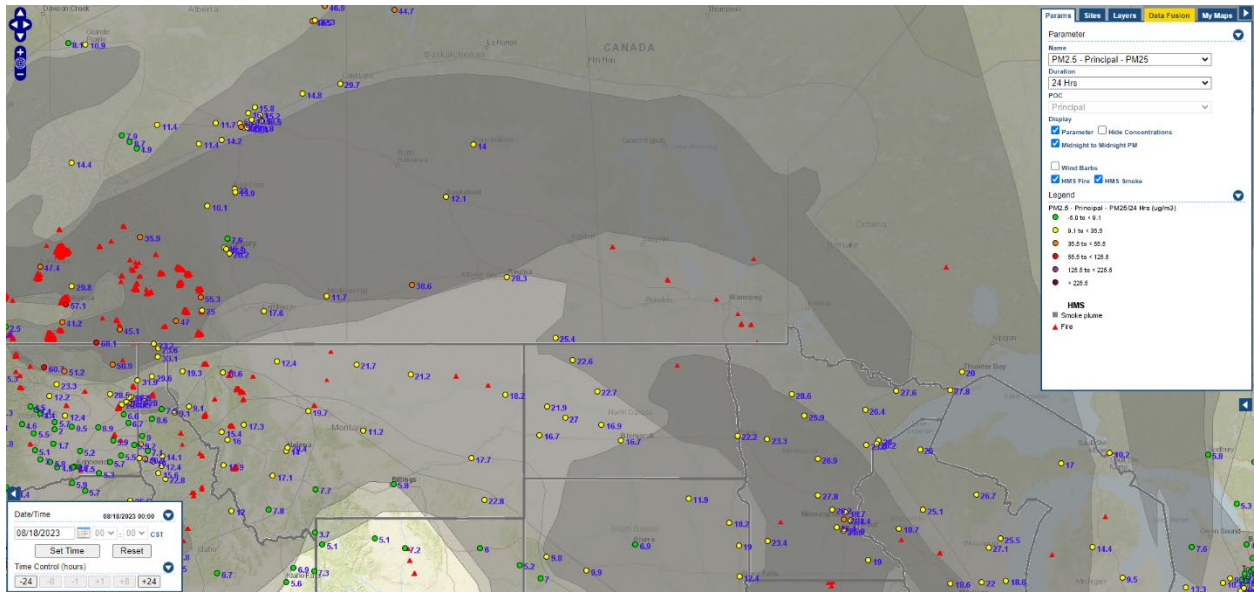
Backward trajectories for August 17, 2023.

8/18/2023 Impacts

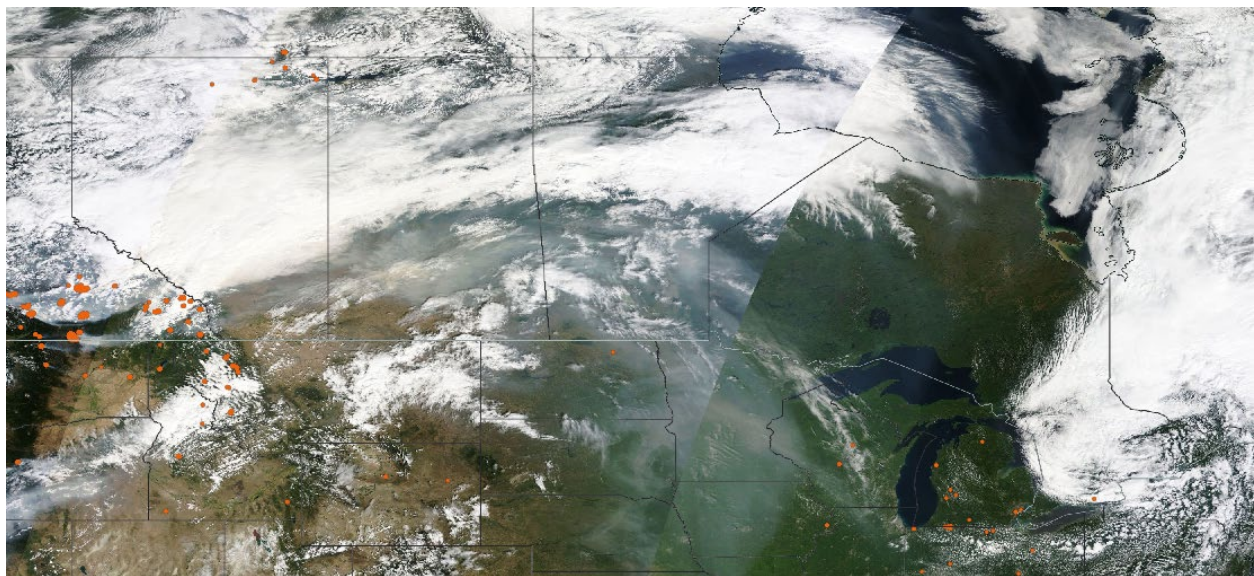
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 18, 2023.

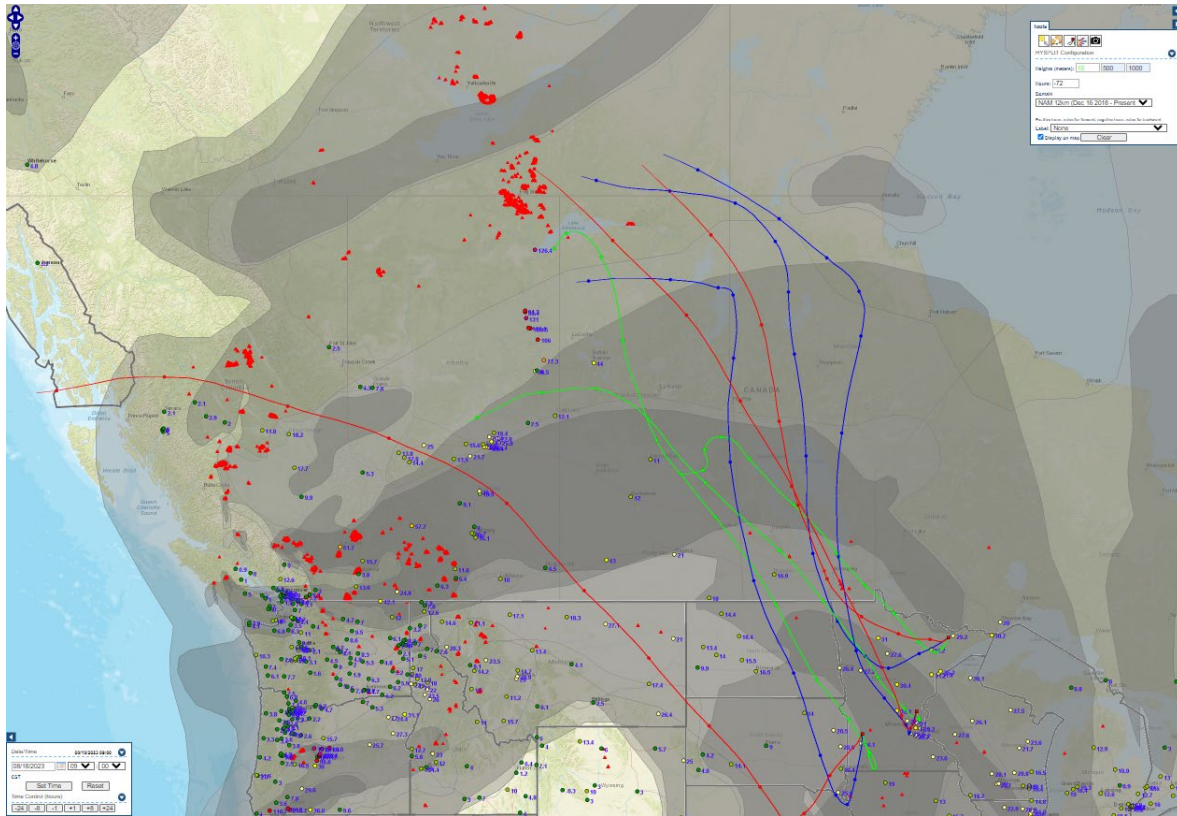
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	8/18/2023	26.9	29.8	Canada Wildfire Smoke
Brainerd	270353204	8/18/2023	27.0	31.8	Canada Wildfire Smoke
Detroit Lakes	270052013	8/18/2023	23.4	29.1	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/18/2023	28.0	35.2	Canada Wildfire Smoke
Ely	270750005	8/18/2023	27.6	32.7	Canada Wildfire Smoke
Fargo NW	380171004	8/18/2023	22.3	32.2	Canada Wildfire Smoke
Fond du Lac	270177417	8/18/2023	23.7	31.2	Canada Wildfire Smoke
Grand Portage	270317810	8/18/2023	27.9	32.5	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/18/2023	24.9	29.1	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/18/2023	25.9	29.7	Canada Wildfire Smoke
Marshall	270834210	8/18/2023	23.4	31.5	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	8/18/2023	37.4	100.1	Canada Wildfire Smoke
Red Lake Nation	270072304	8/18/2023	28.6	35.1	Canada Wildfire Smoke
Rochester	271095008	8/18/2023	19.1	24.1	Canada Wildfire Smoke
Shakopee	271390505	8/18/2023	26.4	30.4	Canada Wildfire Smoke
St. Cloud	271453052	8/18/2023	27.9	32.7	Canada Wildfire Smoke
St. Michael	271713201	8/18/2023	26.2	29.9	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/18/2023	24.4	29.7	Canada Wildfire Smoke
Virginia	271377001	8/18/2023	26.4	31.4	Canada Wildfire Smoke
West Duluth	271377554	8/18/2023	26.2	31.8	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 18, 2023.



MODIS visible satellite for August 18, 2023.



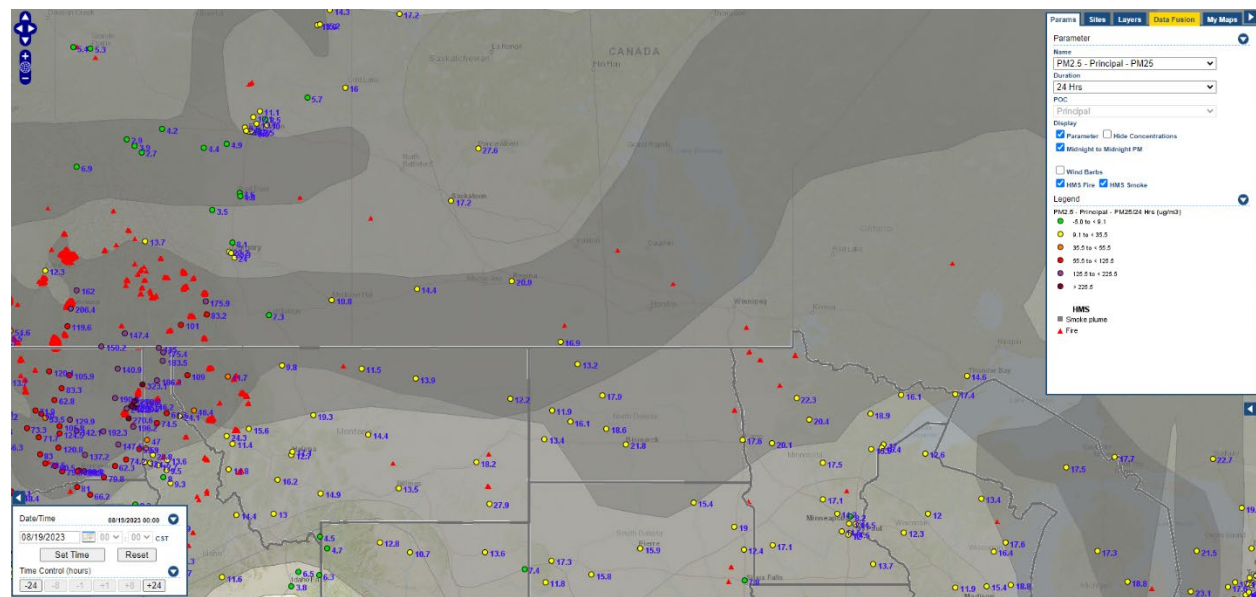
Backward trajectories for August 18, 2023.

8/19/2023 Impacts

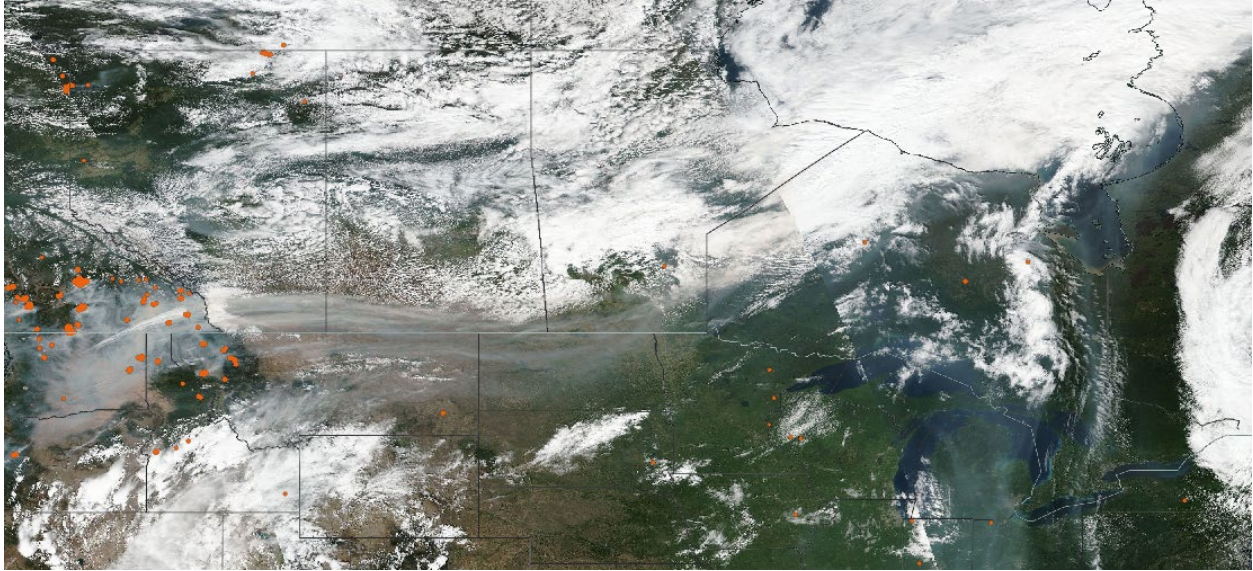
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 19, 2023.

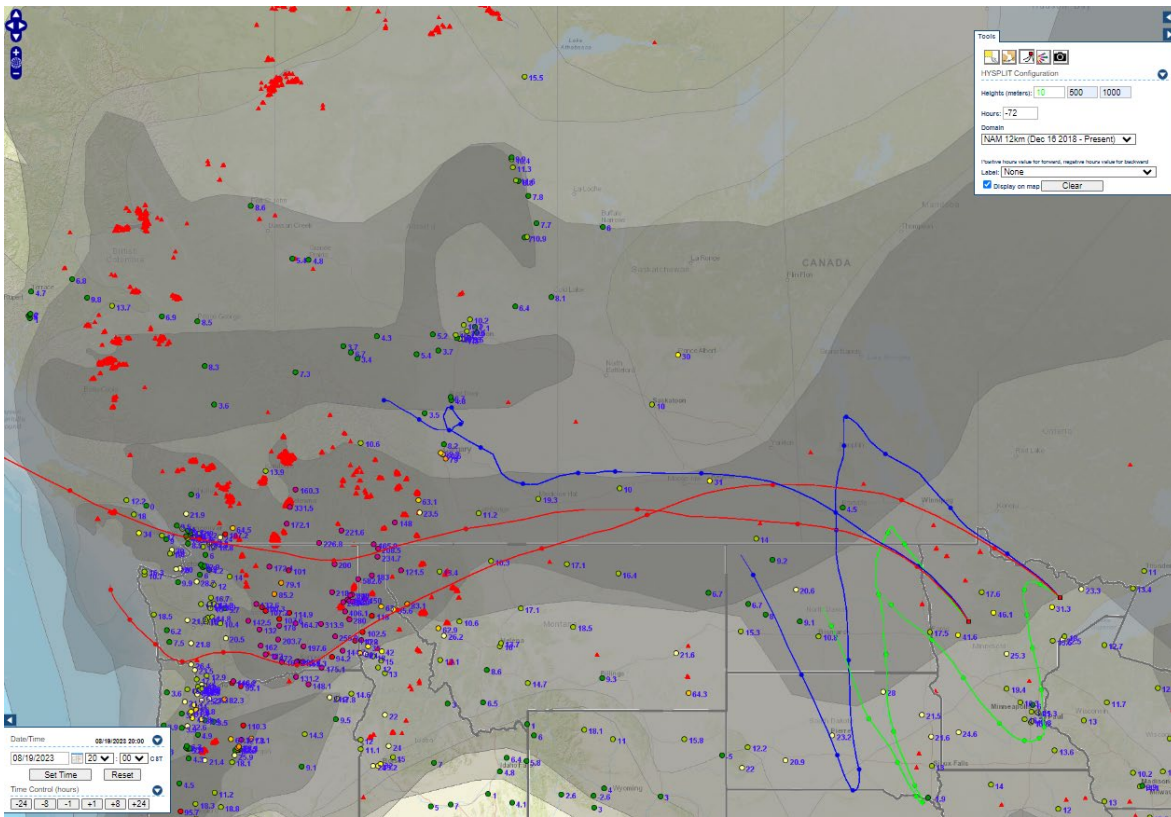
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Detroit Lakes	270052013	8/19/2023	20.1	49.3	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/19/2023	17.1	29.5	Canada Wildfire Smoke
Ely	270750005	8/19/2023	16.1	25.1	Canada Wildfire Smoke
Fond du Lac	270177417	8/19/2023	15.5	30.1	Canada Wildfire Smoke
Grand Portage	270317810	8/19/2023	17.4	27.3	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/19/2023	20.5	46.1	Canada Wildfire Smoke
Marshall	270834210	8/19/2023	17.2	39	Canada Wildfire Smoke
Red Lake Nation	270072304	8/19/2023	22.3	63.6	Canada Wildfire Smoke
Virginia	271377001	8/19/2023	18.9	31.3	Canada Wildfire Smoke
West Duluth	271377554	8/19/2023	16.5	25	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 19, 2023.



MODIS visible satellite for August 19, 2023.



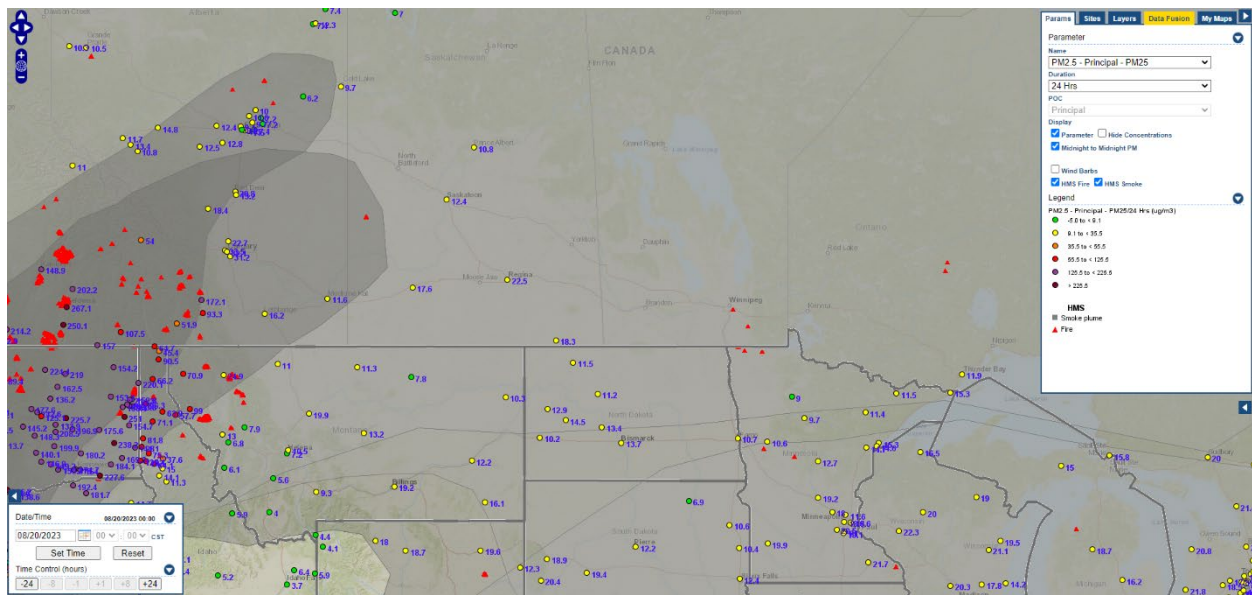
Backward trajectories for August 19, 2023.

8/20/2023 Impacts

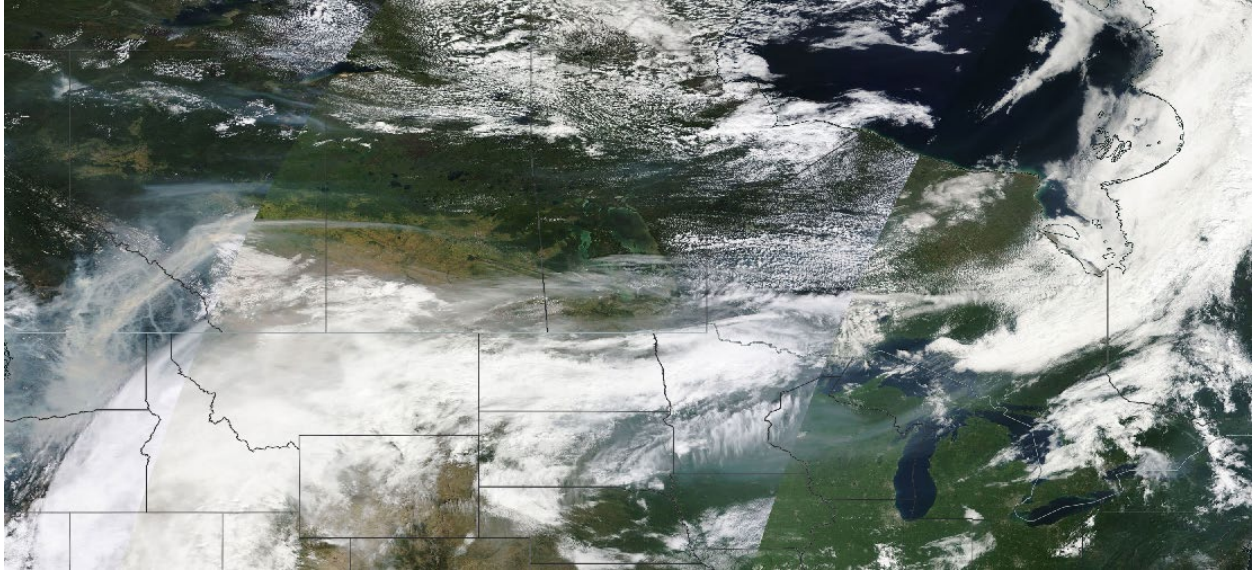
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 20, 2023.

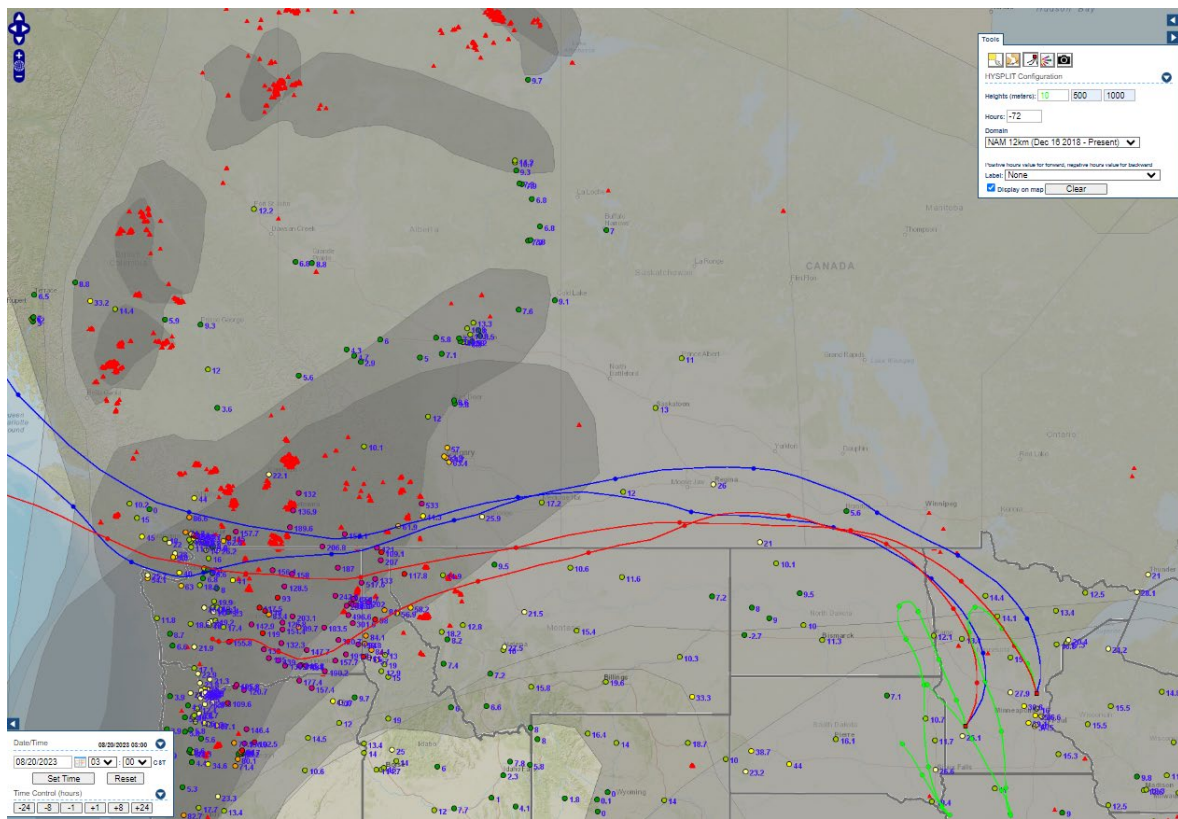
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	8/20/2023	21.1	40	Canada Wildfire Smoke
Grand Portage	270317810	8/20/2023	15.3	28.6	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/20/2023	19.2	37.5	Canada Wildfire Smoke
Marshall	270834210	8/20/2023	19.9	49	Canada Wildfire Smoke
Rochester	271095008	8/20/2023	21.8	33.3	Canada Wildfire Smoke
Shakopee	271390505	8/20/2023	20.5	39.1	Canada Wildfire Smoke
St. Cloud	271453052	8/20/2023	19.3	44.2	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 20, 2023.



MODIS visible satellite for August 20, 2023.



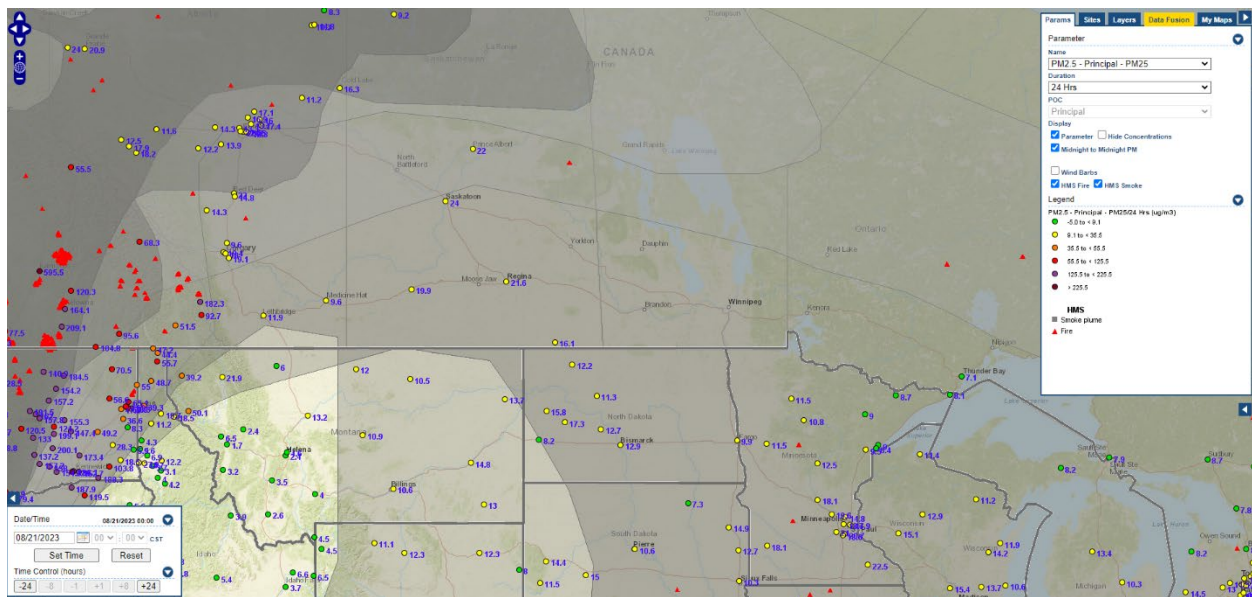
Backward trajectories for August 20, 2023.

8/21/2023 Impacts

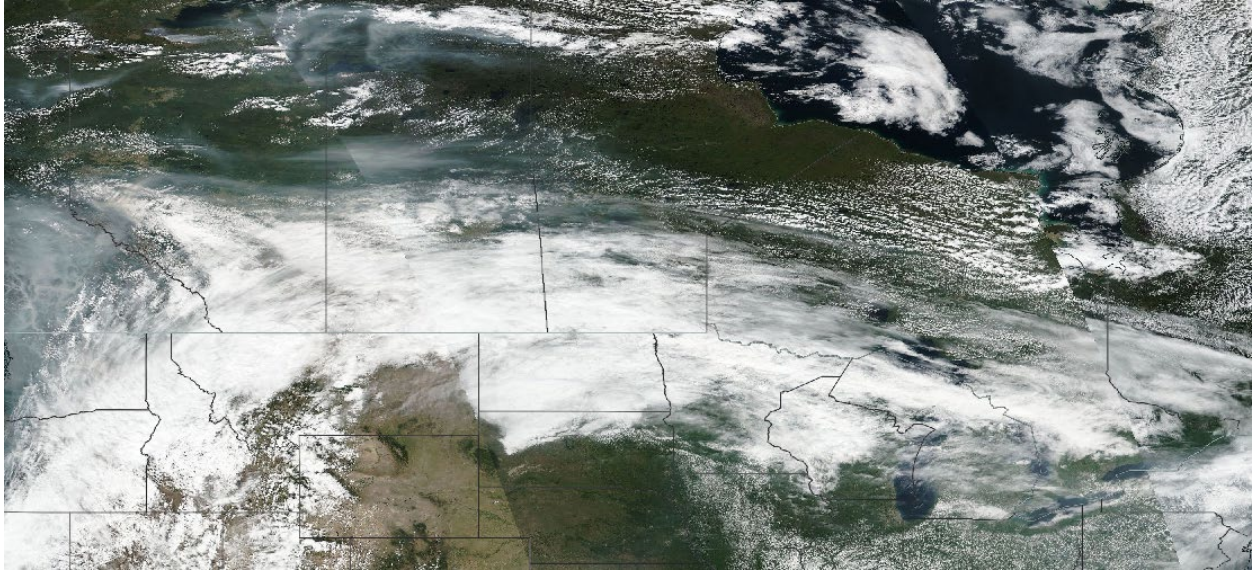
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 21, 2023.

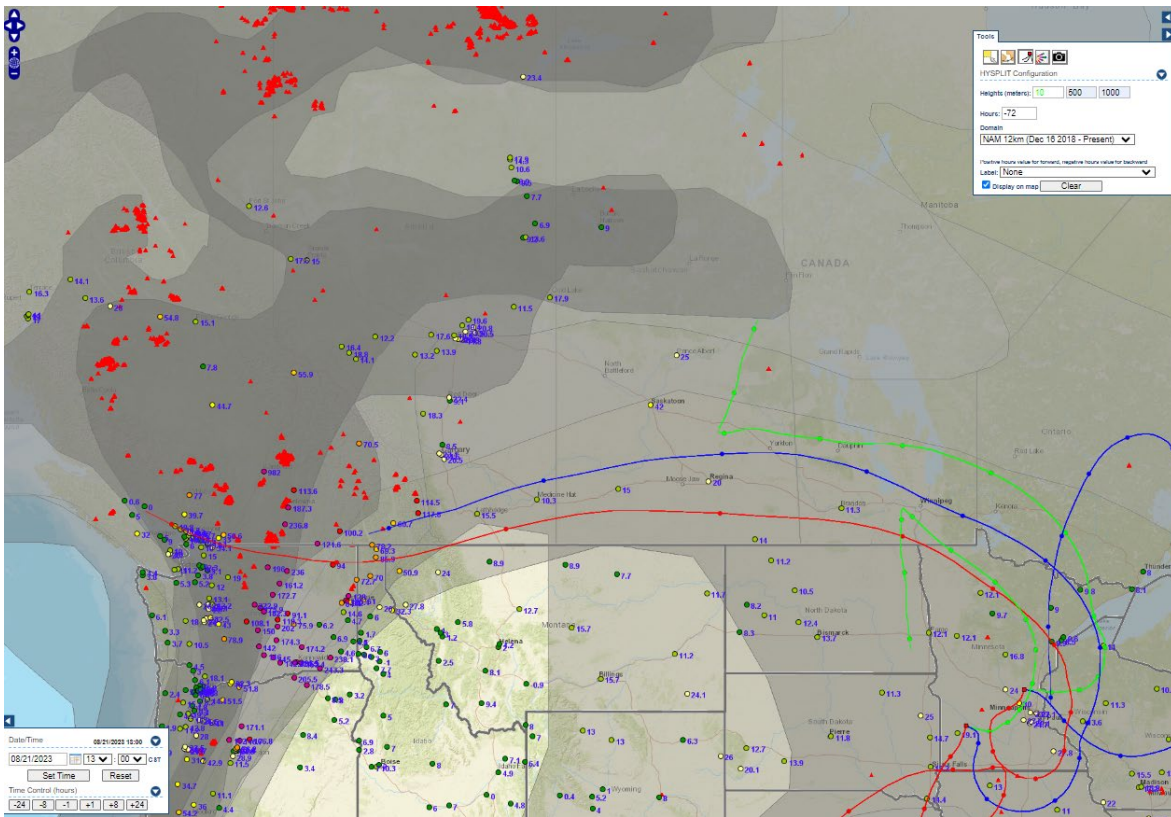
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	8/21/2023	20.8	29.1	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/21/2023	18.7	24.7	Canada Wildfire Smoke
Marshall	270834210	8/21/2023	18.1	24	Canada Wildfire Smoke
Rochester	271095008	8/21/2023	22.6	27.9	Canada Wildfire Smoke
Shakopee	271390505	8/21/2023	21.0	29.3	Canada Wildfire Smoke
St. Cloud	271453052	8/21/2023	18.1	25.6	Canada Wildfire Smoke
St. Michael	271713201	8/21/2023	19.7	30	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 21, 2023.



MODIS visible satellite for August 21, 2023.



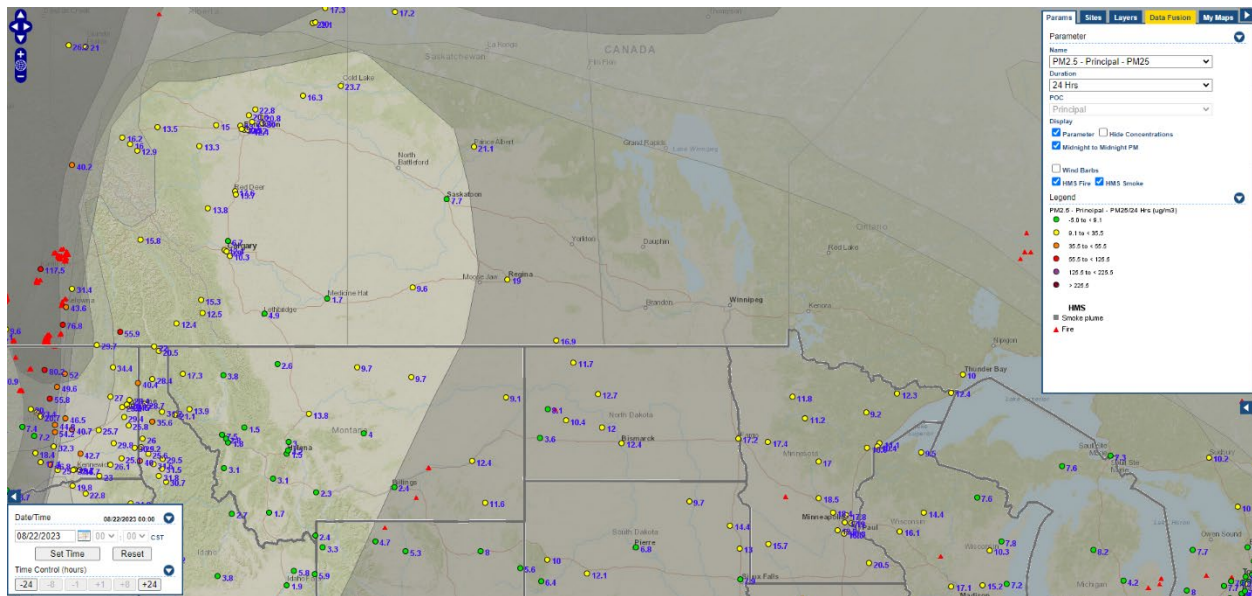
Backward trajectories for August 21, 2023.

8/22/2023 Impacts

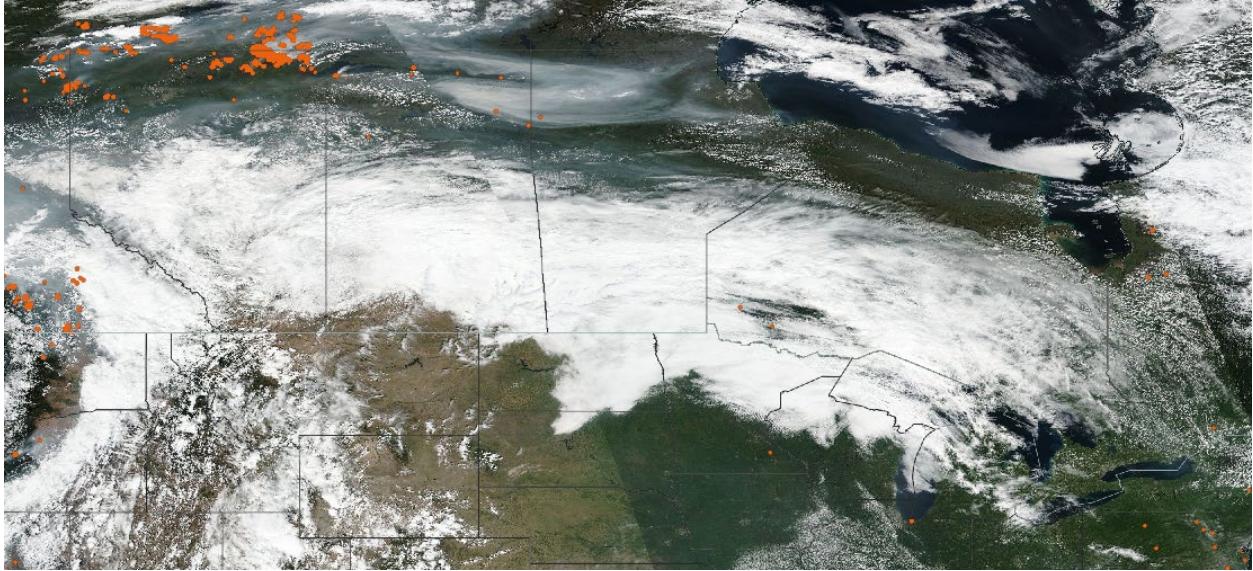
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 22, 2023.

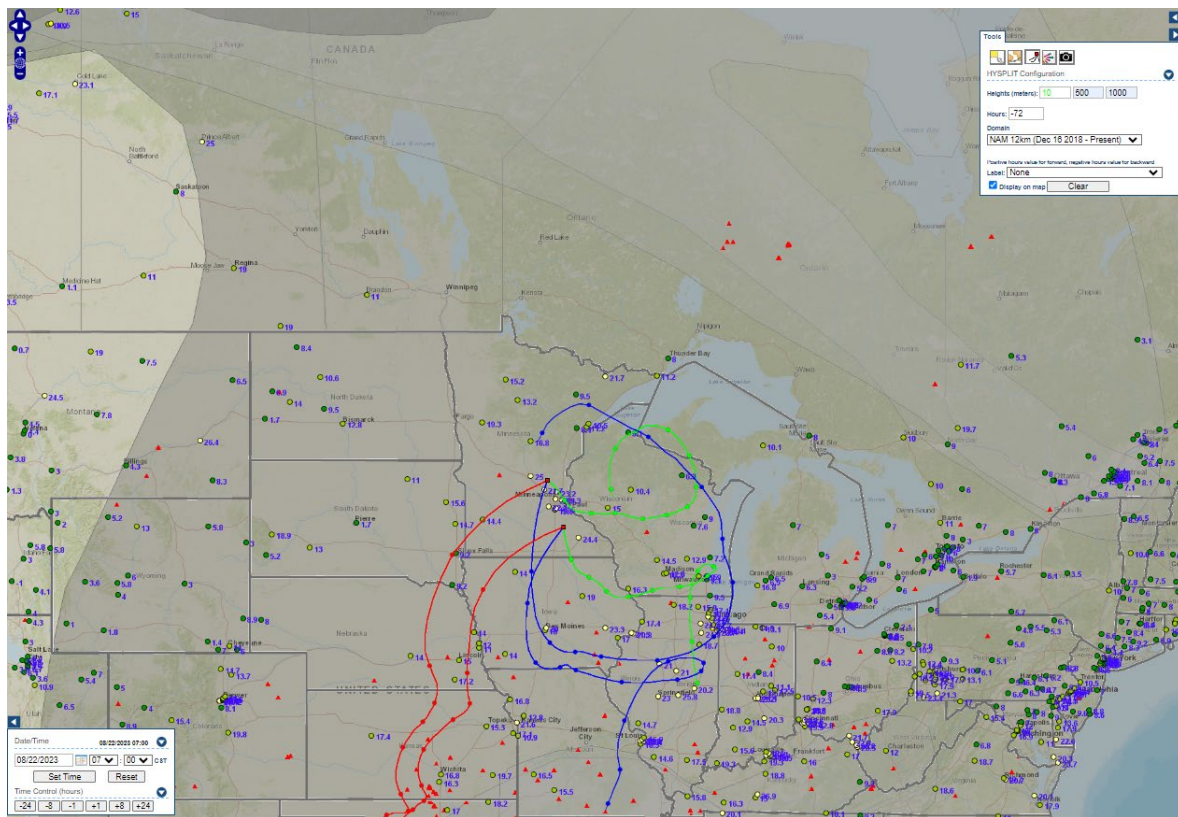
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	8/22/2023	20.4	26.8	Canada Wildfire Smoke
Rochester	271095008	8/22/2023	20.5	24.4	Canada Wildfire Smoke
Shakopee	271390505	8/22/2023	19.9	23	Canada Wildfire Smoke
St. Cloud	271453052	8/22/2023	18.6	25	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/22/2023	19.1	22.9	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 22, 2023.



MODIS visible satellite for August 22, 2023.



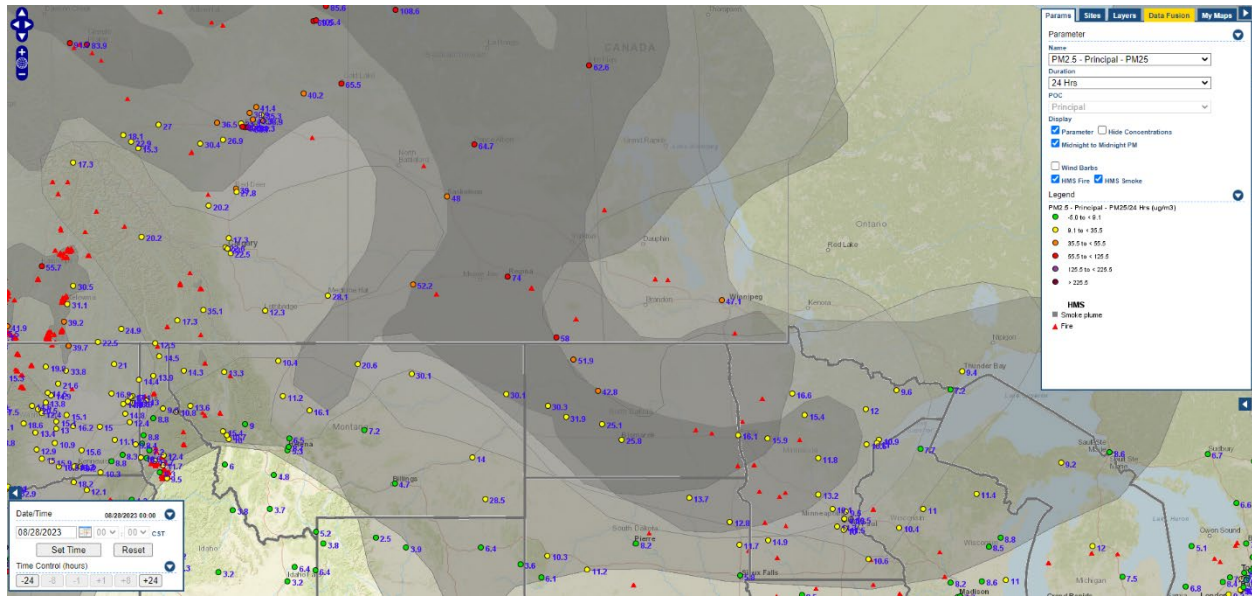
Backward trajectories for August 22, 2023.

8/28/2023 Impacts

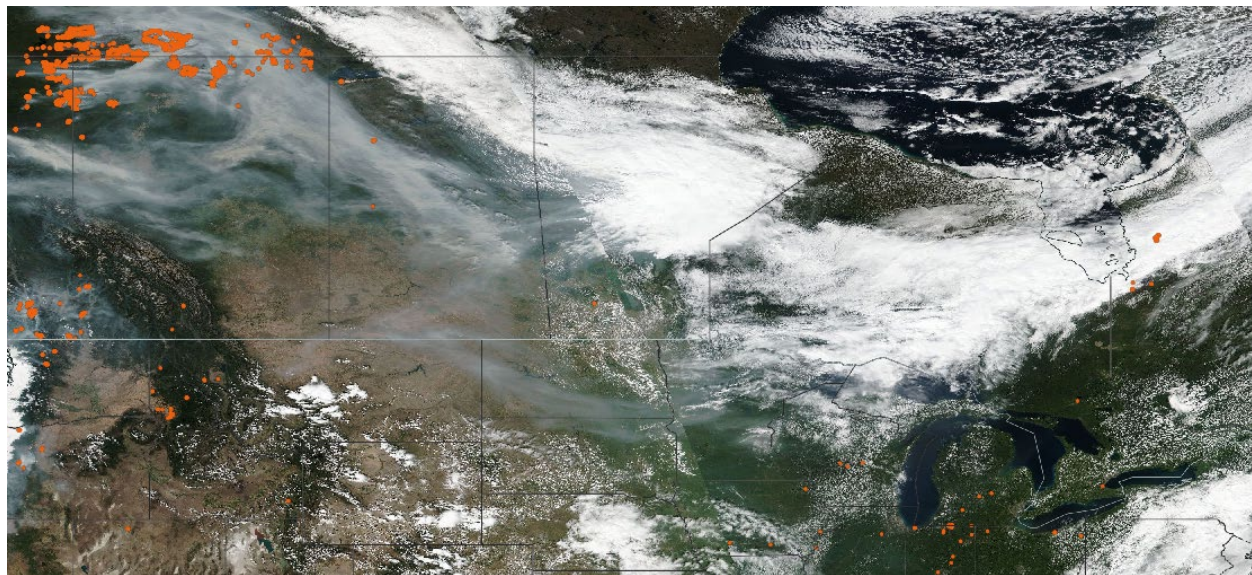
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 28, 2023.

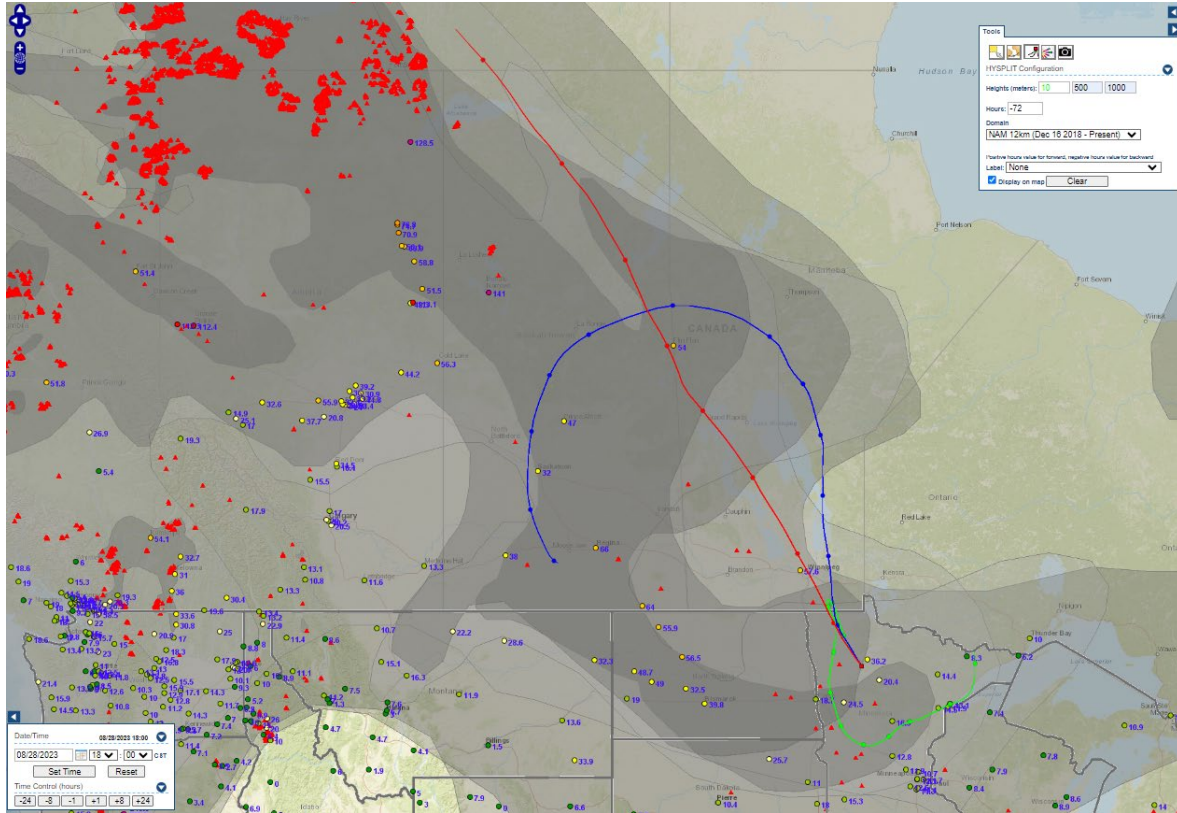
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Red Lake Nation	270072304	8/28/2023	16.7	36.2	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 28, 2023.



MODIS visible satellite for August 28, 2023.



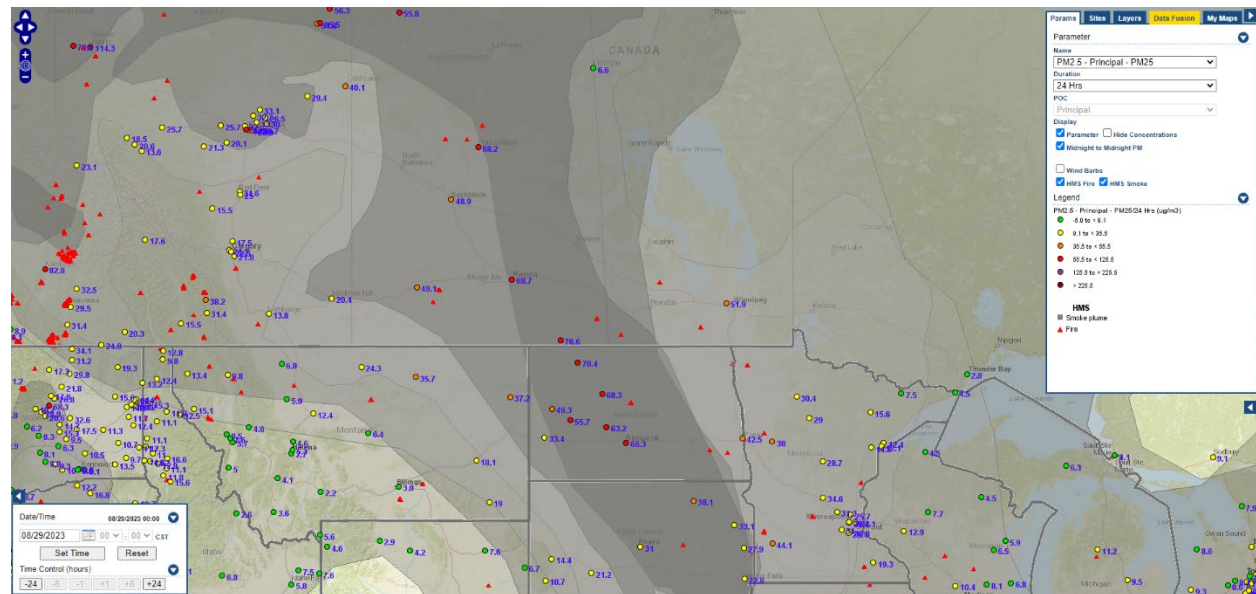
Backward trajectories for August 28, 2023.

8/29/2023 Impacts

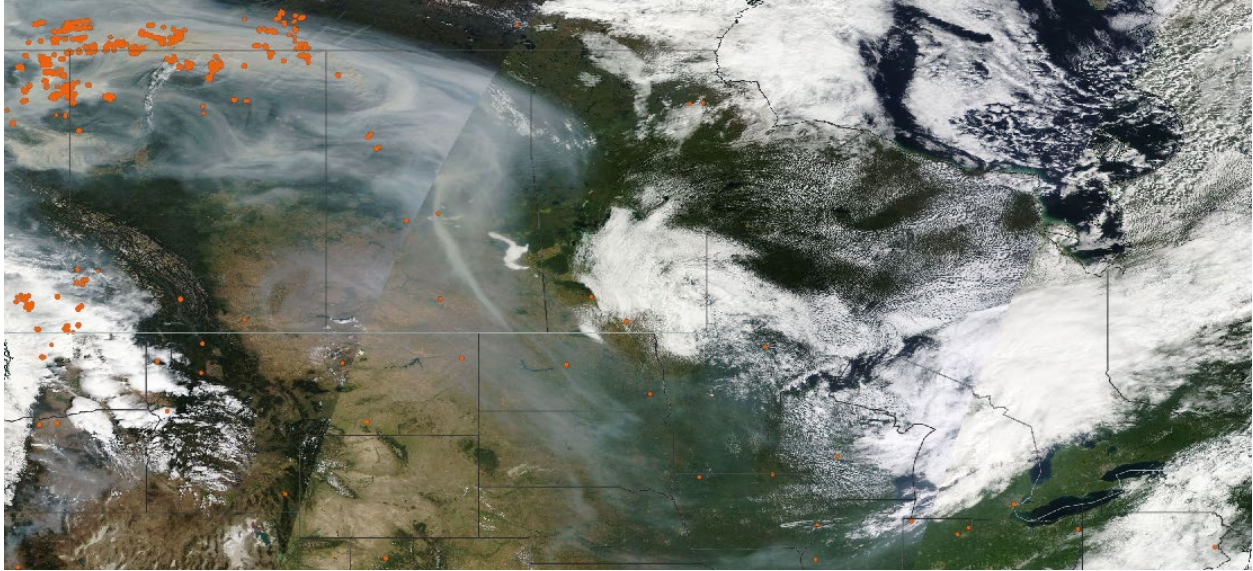
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 29, 2023.

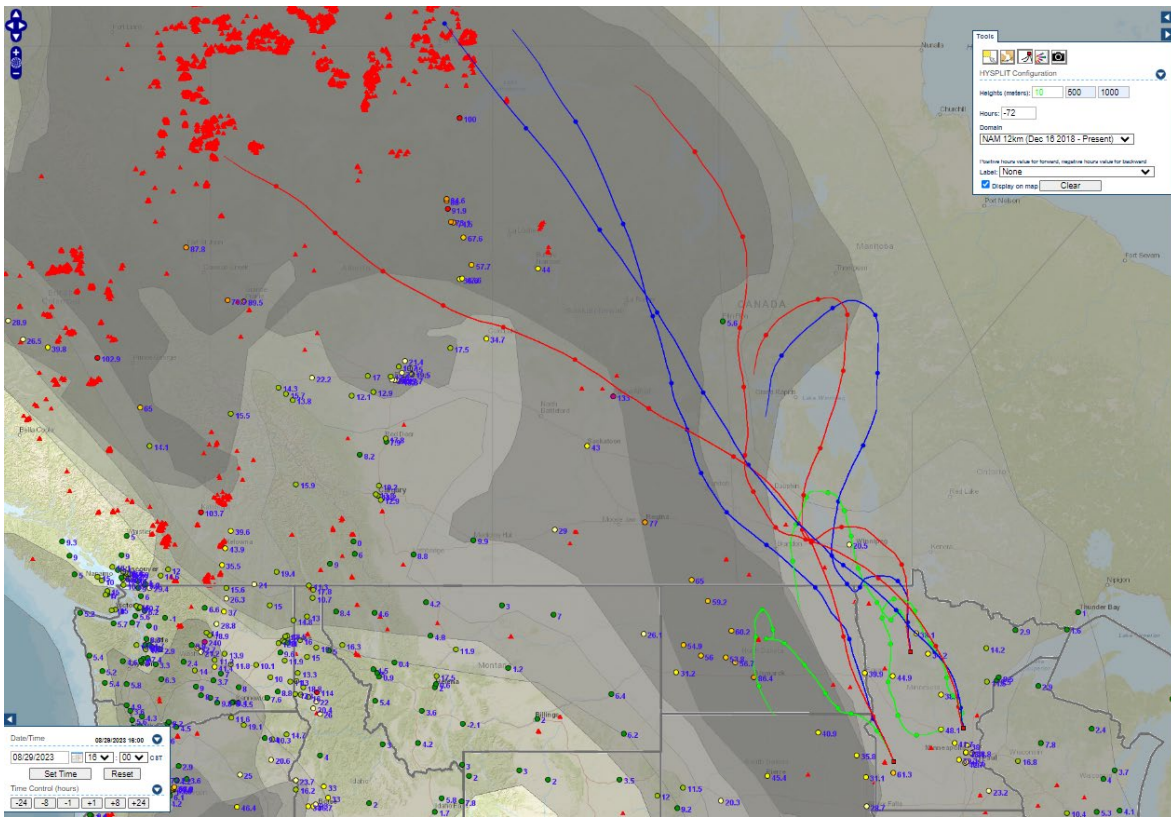
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	8/29/2023	30.9	46.6	Canada Wildfire Smoke
Blaine	270031002	8/29/2023	25.8	39.5	Canada Wildfire Smoke
Brainerd	270353204	8/29/2023	28.7	49.7	Canada Wildfire Smoke
Detroit Lakes	270052013	8/29/2023	38.0	73.5	Canada Wildfire Smoke
Fargo NW	380171004	8/29/2023	42.5	79.5	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/29/2023	29.1	43.5	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/29/2023	29.0	43.8	Canada Wildfire Smoke
Marshall	270834210	8/29/2023	44.1	76.5	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	8/29/2023	30.5	44.8	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	8/29/2023	27.3	40.7	Canada Wildfire Smoke
Red Lake Nation	270072304	8/29/2023	30.5	41.5	Canada Wildfire Smoke
Rochester	271095008	8/29/2023	19.3	29	Canada Wildfire Smoke
Shakopee	271390505	8/29/2023	31.1	43.3	Canada Wildfire Smoke
St. Cloud	271453052	8/29/2023	34.6	48.7	Canada Wildfire Smoke
St. Michael	271713201	8/29/2023	31.3	41.7	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/29/2023	24.1	38.8	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 29, 2023.



MODIS visible satellite for August 29, 2023.



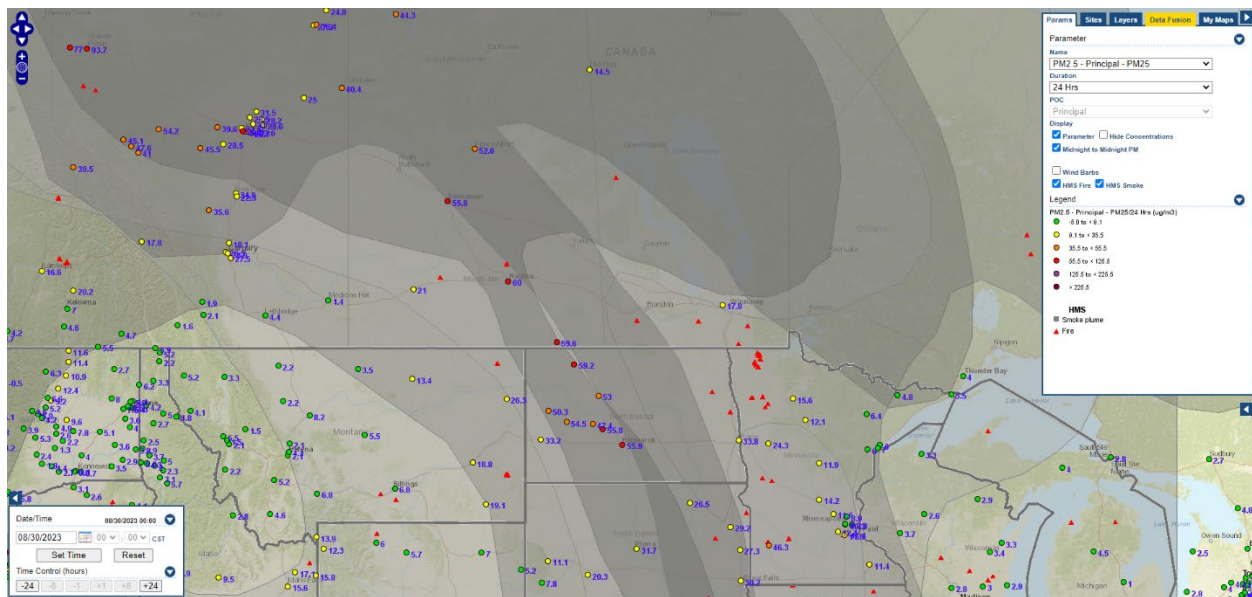
Backward trajectories for August 29, 2023.

8/30/2023 Impacts

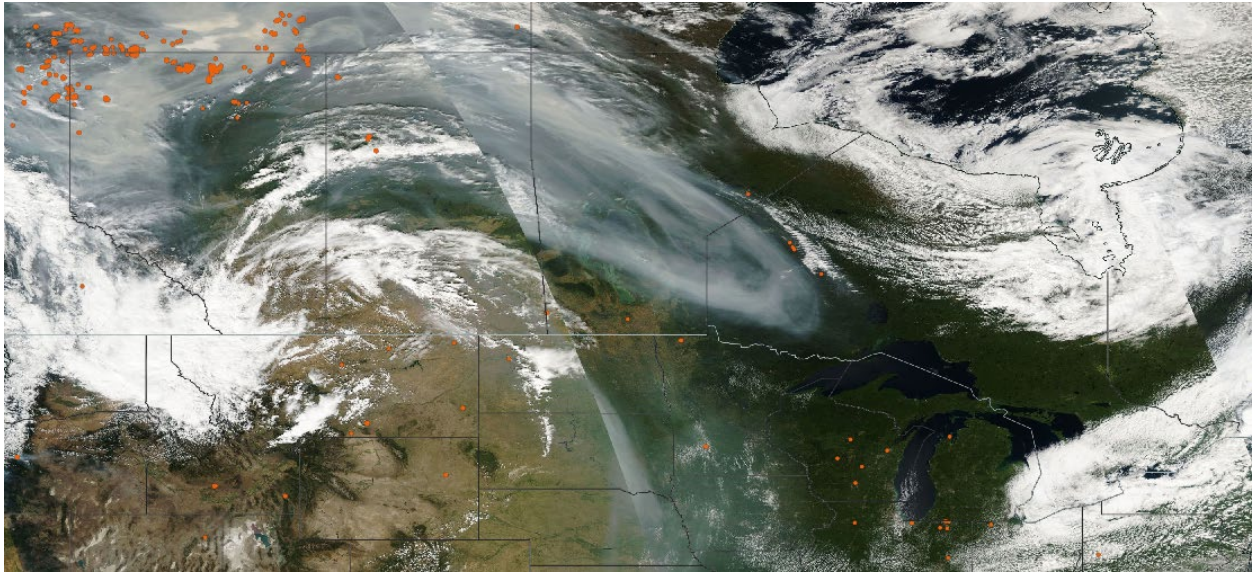
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 30, 2023.

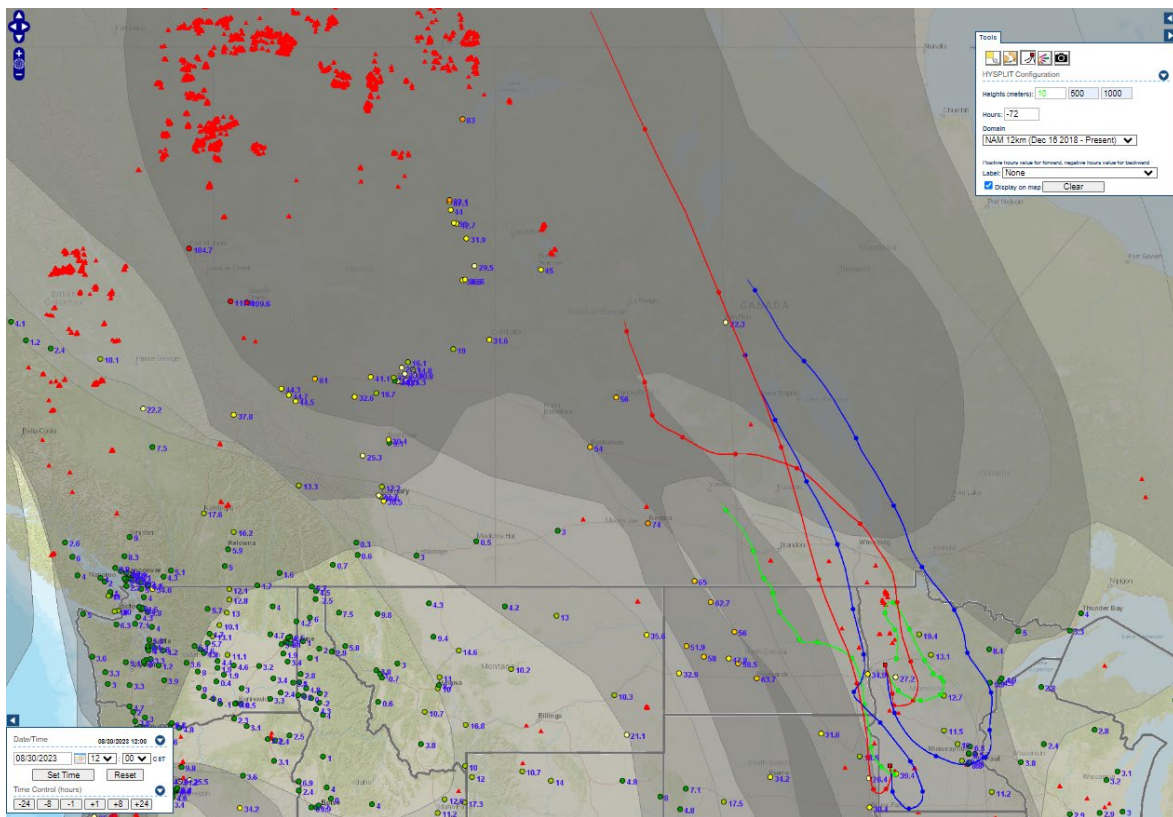
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Detroit Lakes	270052013	8/30/2023	24.4	36.9	Canada Wildfire Smoke
Fargo NW	380171004	8/30/2023	33.8	47.3	Canada Wildfire Smoke
Marshall	270834210	8/30/2023	46.3	78	Canada Wildfire Smoke
Red Lake Nation	270072304	8/30/2023	15.6	19.4	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 30, 2023.



MODIS visible satellite for August 30, 2023.



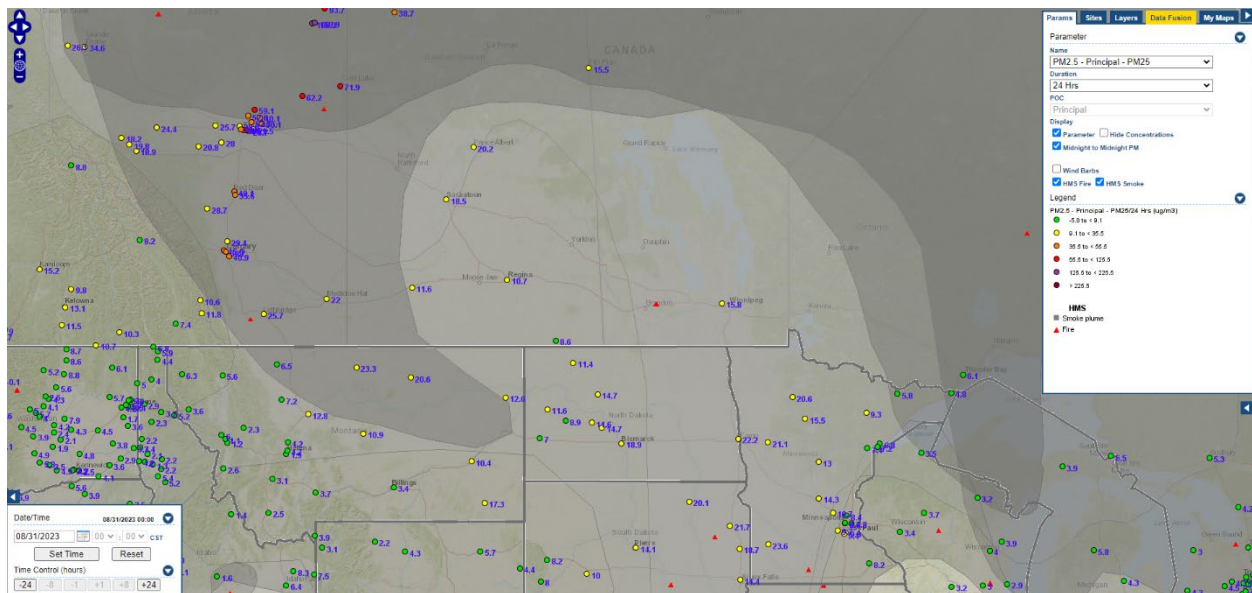
Backward trajectories for August 30, 2023.

8/31/2023 Impacts

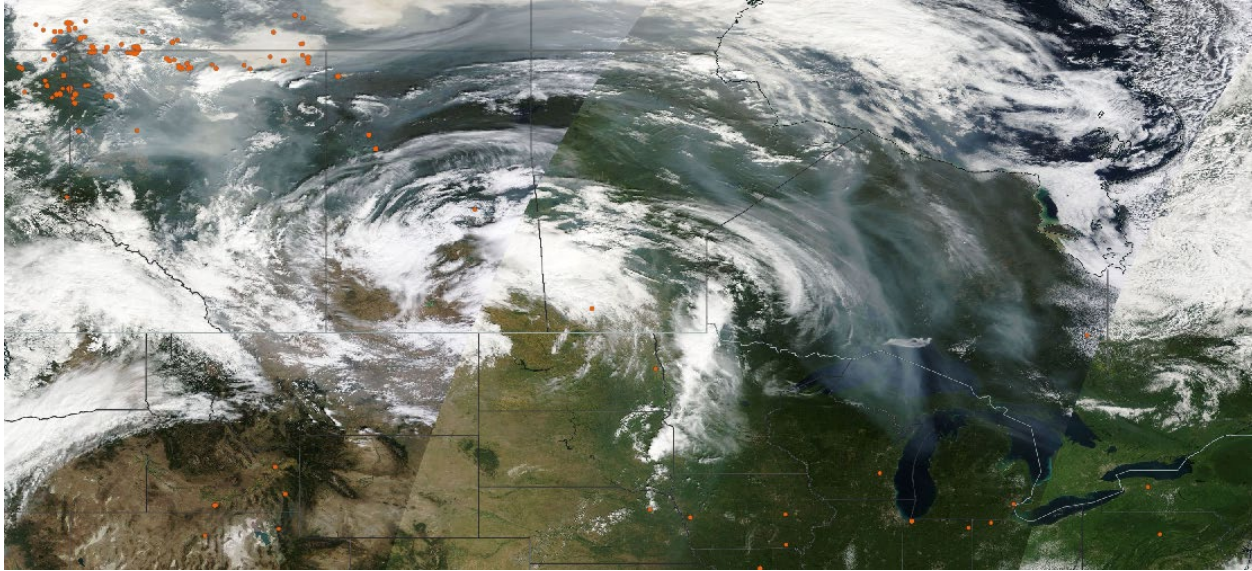
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 31, 2023.

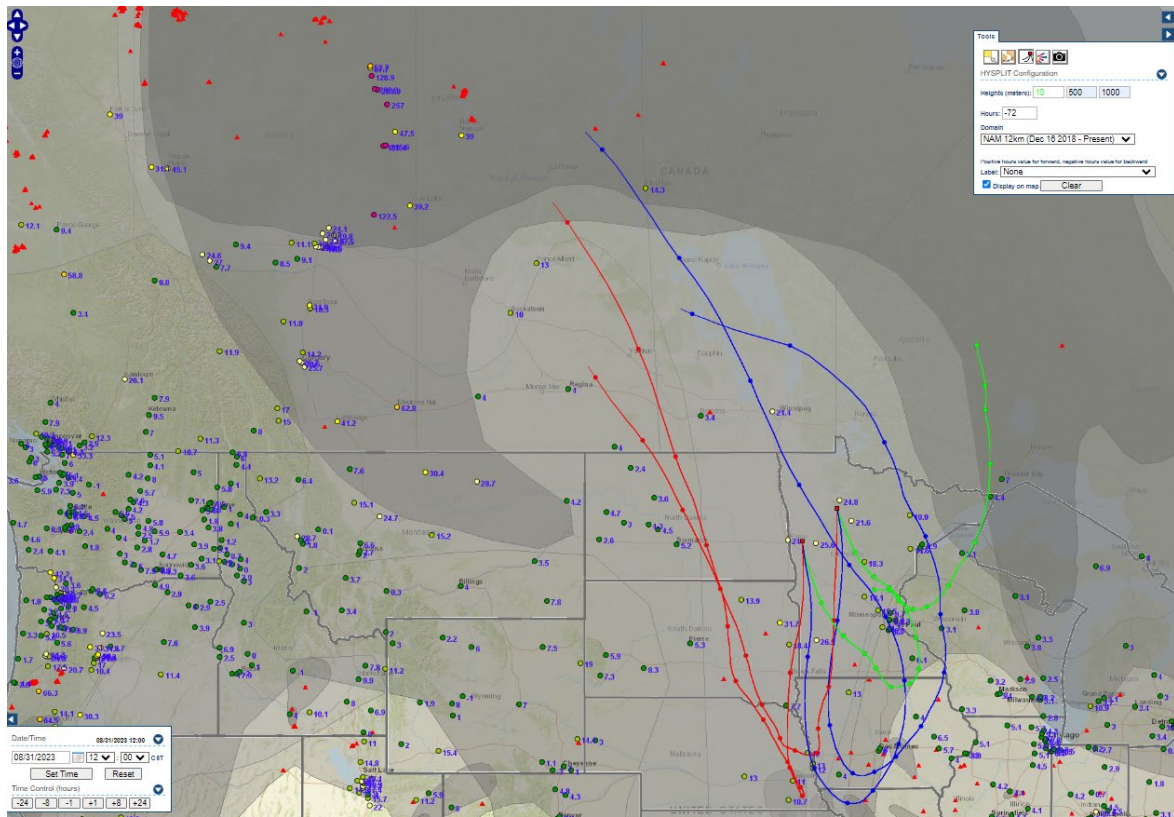
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Detroit Lakes	270052013	8/31/2023	21.1	25.6	Canada Wildfire Smoke
Fargo NW	380171004	8/31/2023	22.3	25.4	Canada Wildfire Smoke
Marshall	270834210	8/31/2023	23.6	29.7	Canada Wildfire Smoke
Red Lake Nation	270072304	8/31/2023	20.7	26.4	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 31, 2023.



MODIS visible satellite for August 31, 2023.



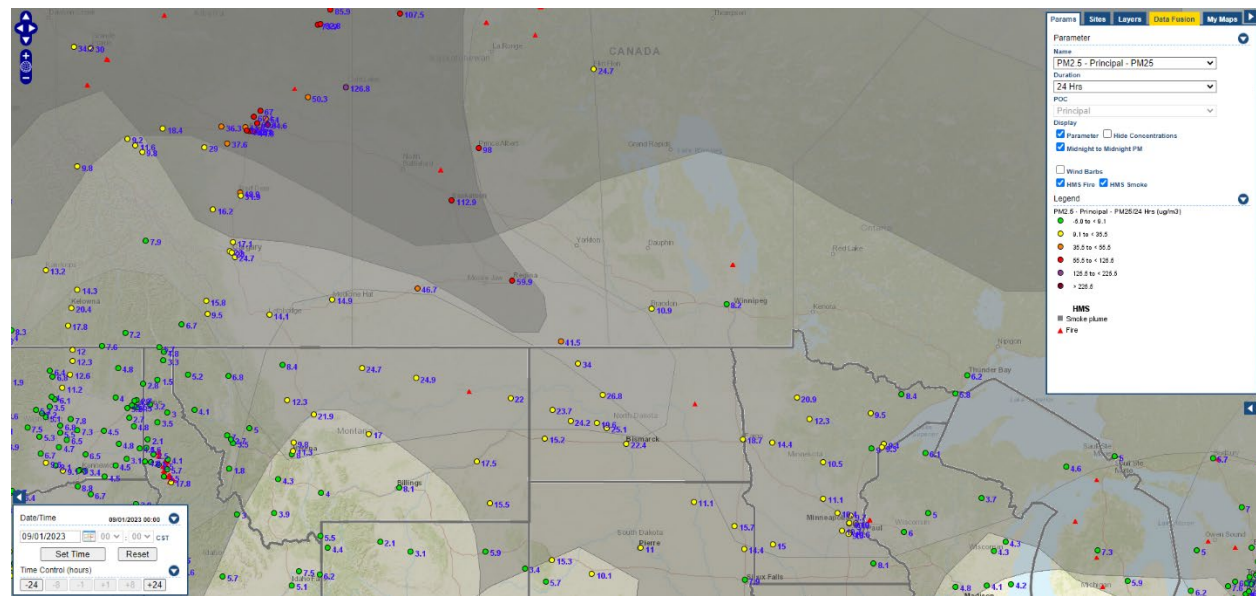
Backward trajectories for August 31, 2023.

9/1/2023 Impacts

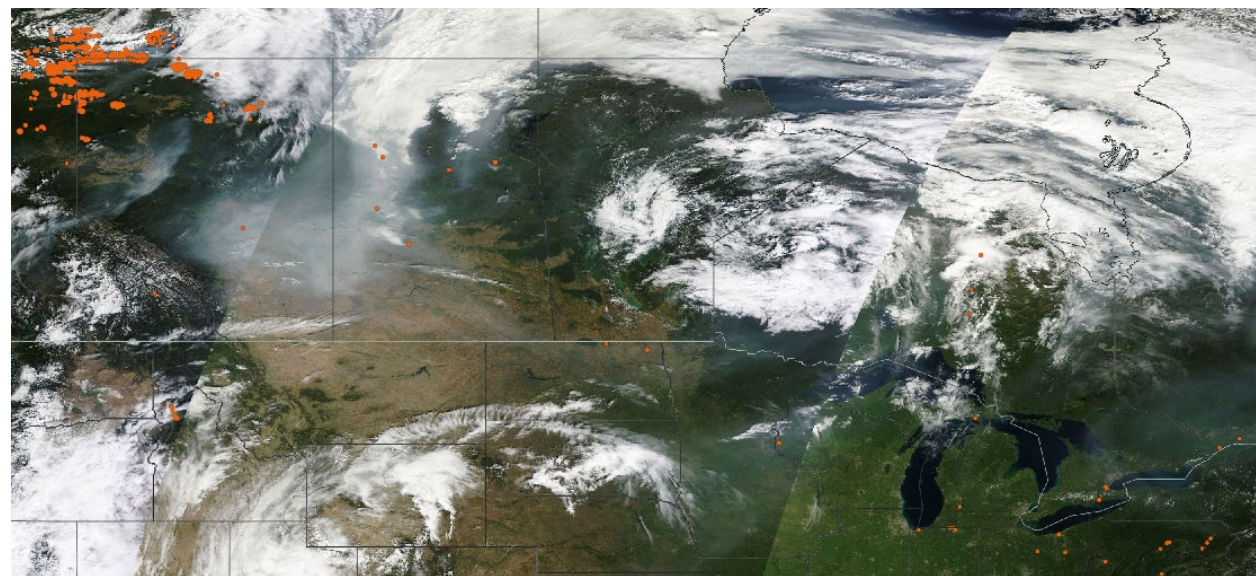
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 1, 2023.

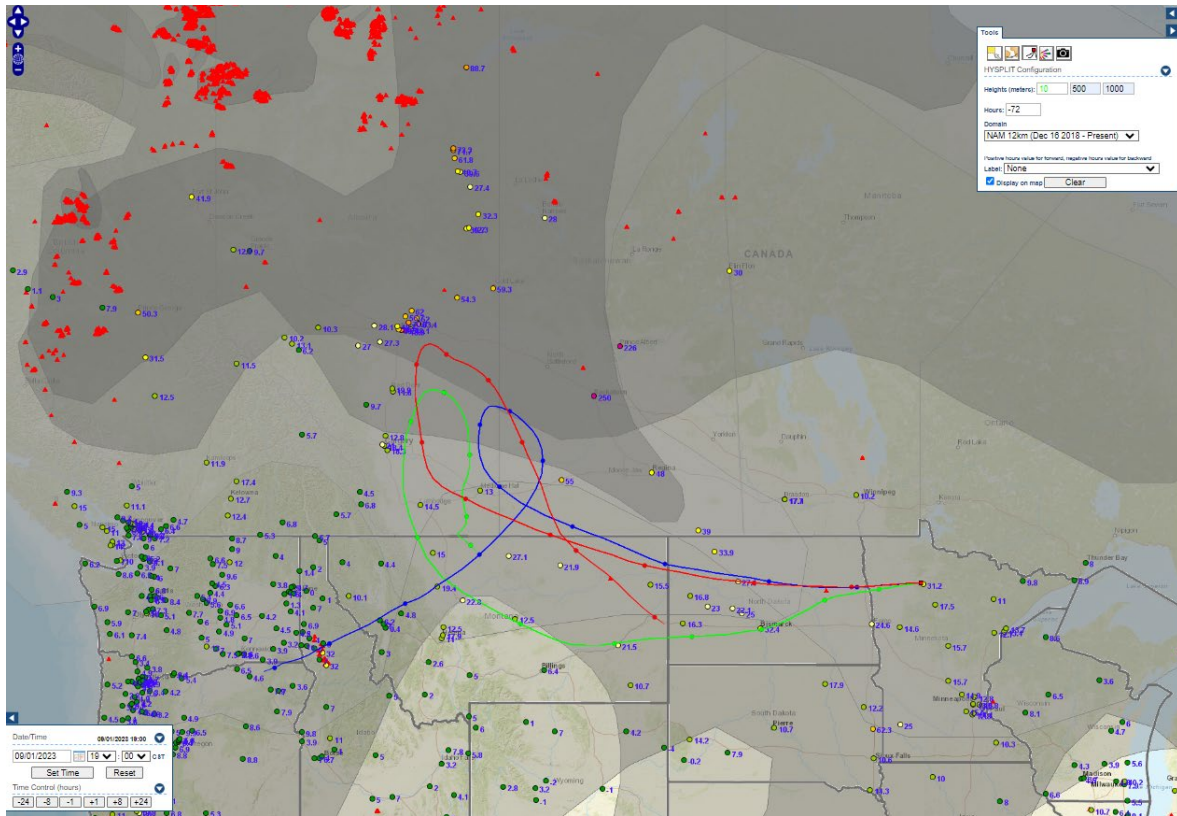
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Red Lake Nation	270072304	9/1/2023	21.0	31.4	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 1, 2023.



MODIS visible satellite for September 1, 2023.



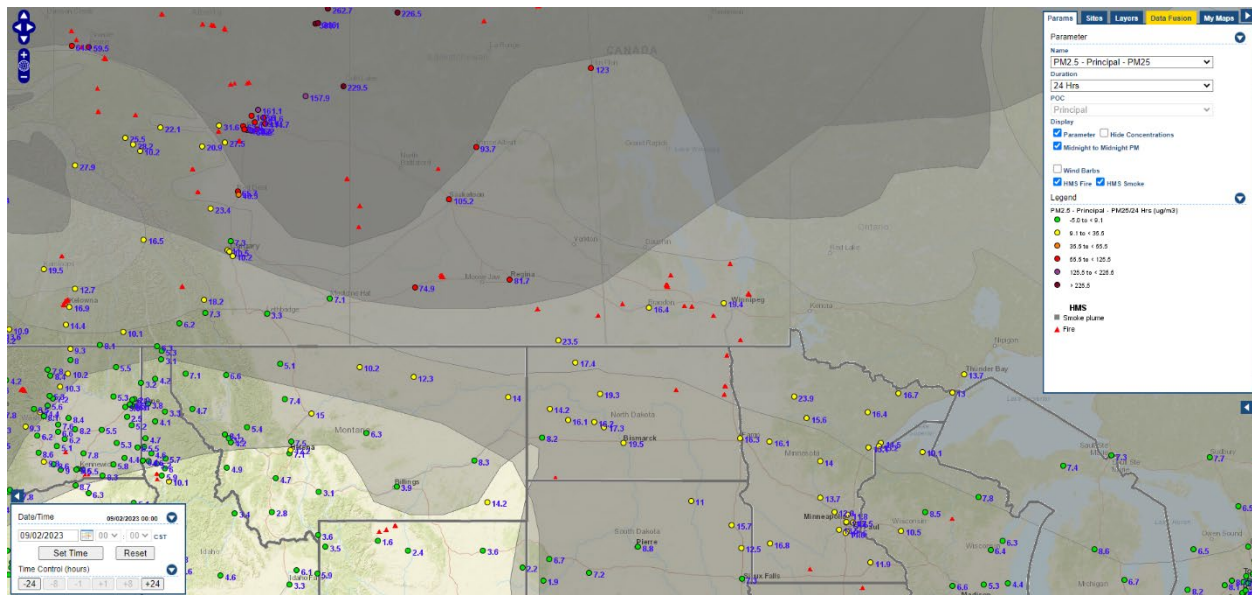
Backward trajectories for September 1, 2023.

9/2/2023 Impacts

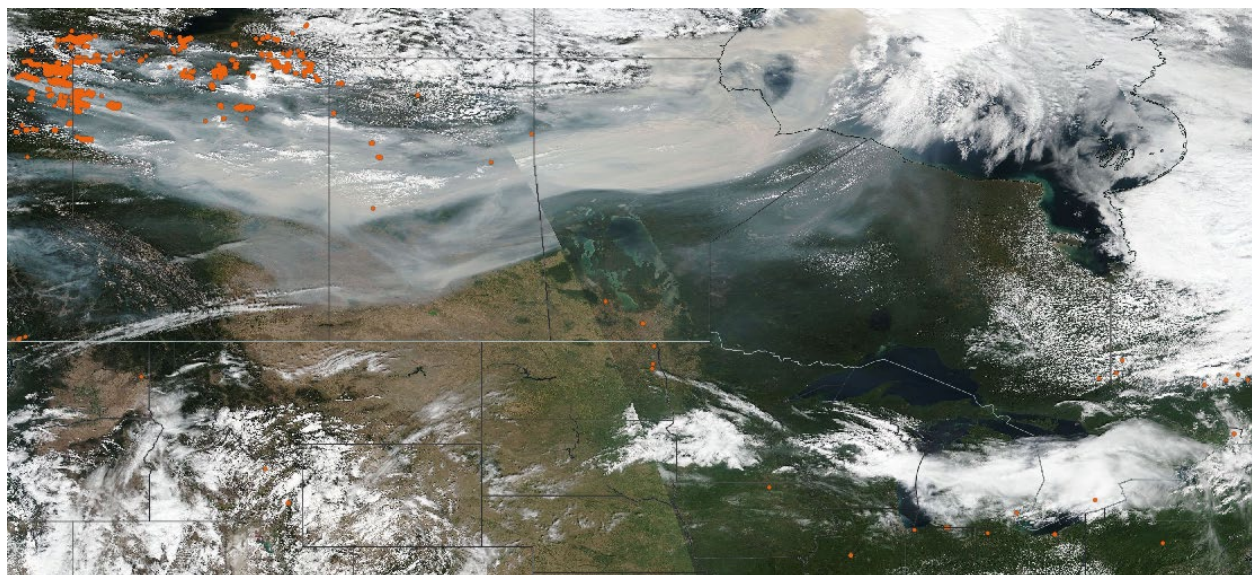
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 2, 2023.

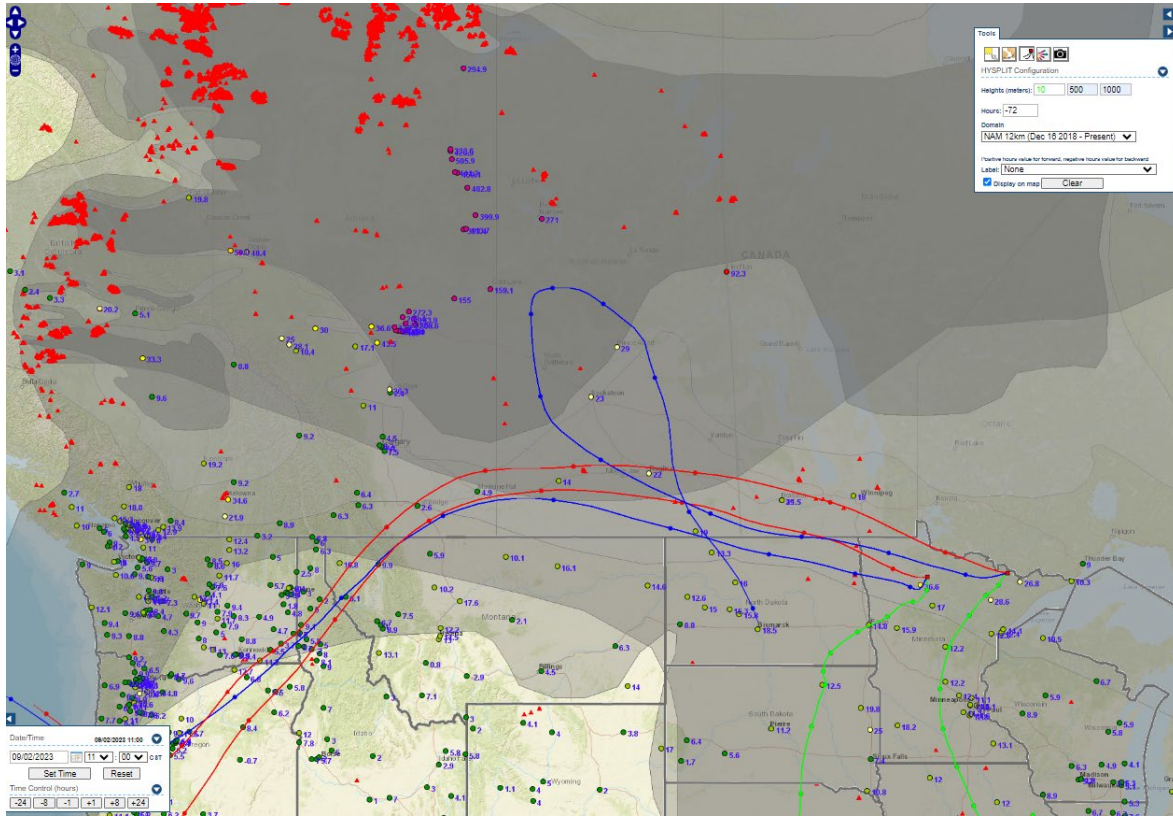
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Ely	270750005	9/2/2023	16.8	28.4	Canada Wildfire Smoke
Red Lake Nation	270072304	9/2/2023	23.9	39.7	Canada Wildfire Smoke
Virginia	271377001	9/2/2023	16.5	28.6	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 2, 2023.



MODIS visible satellite for September 2, 2023.



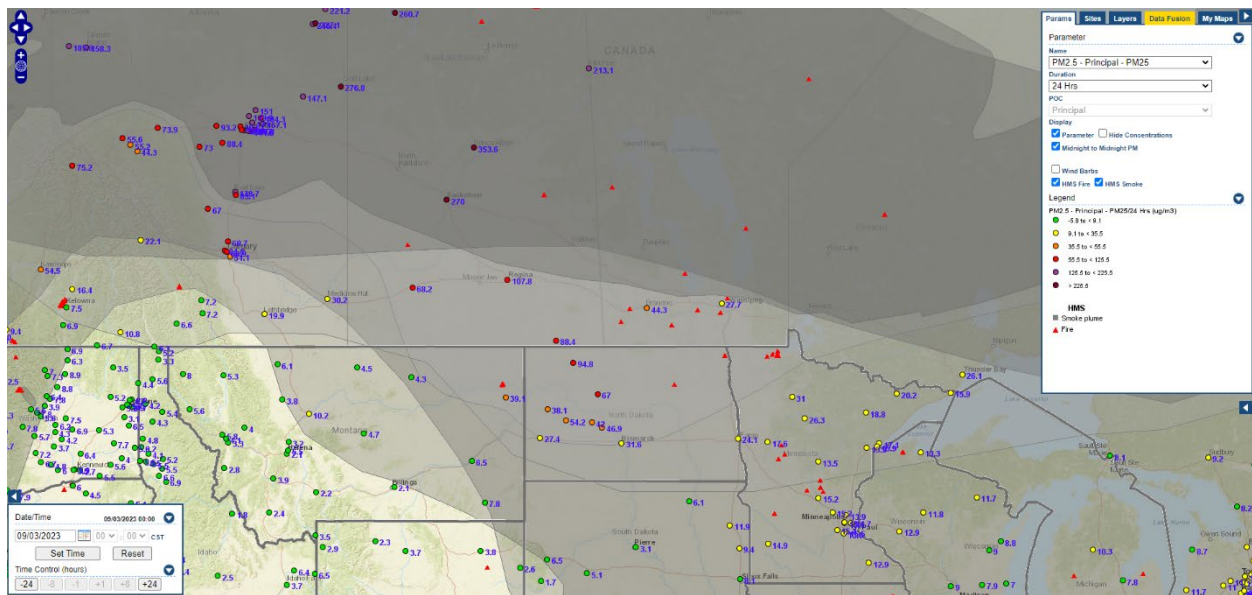
Backward trajectories for September 2, 2023.

9/3/2023 Impacts

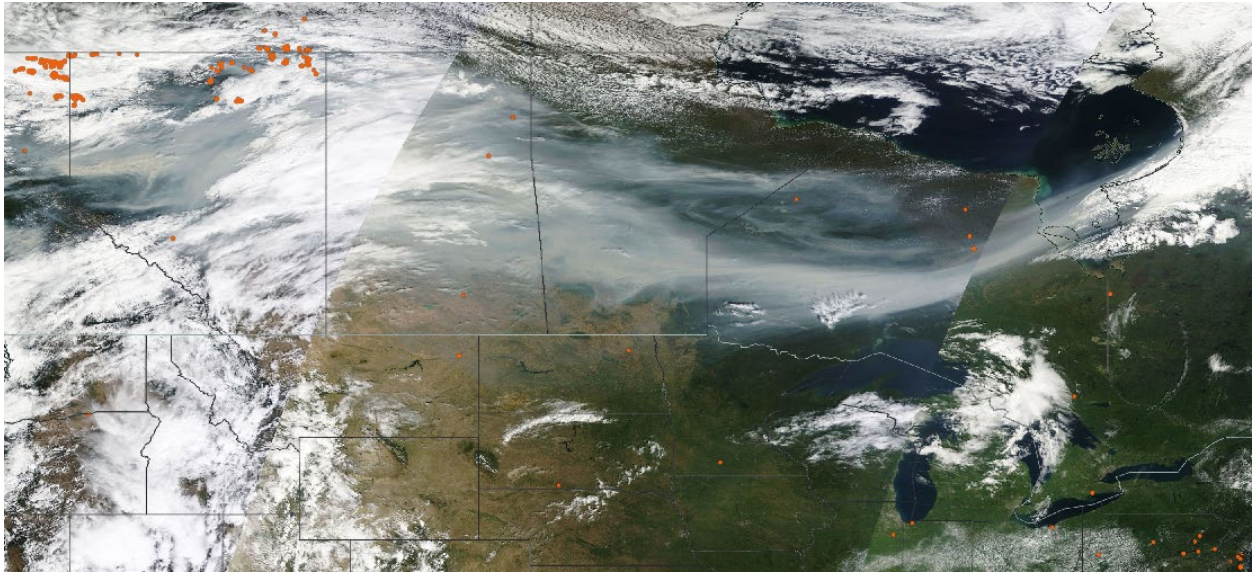
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 3, 2023.

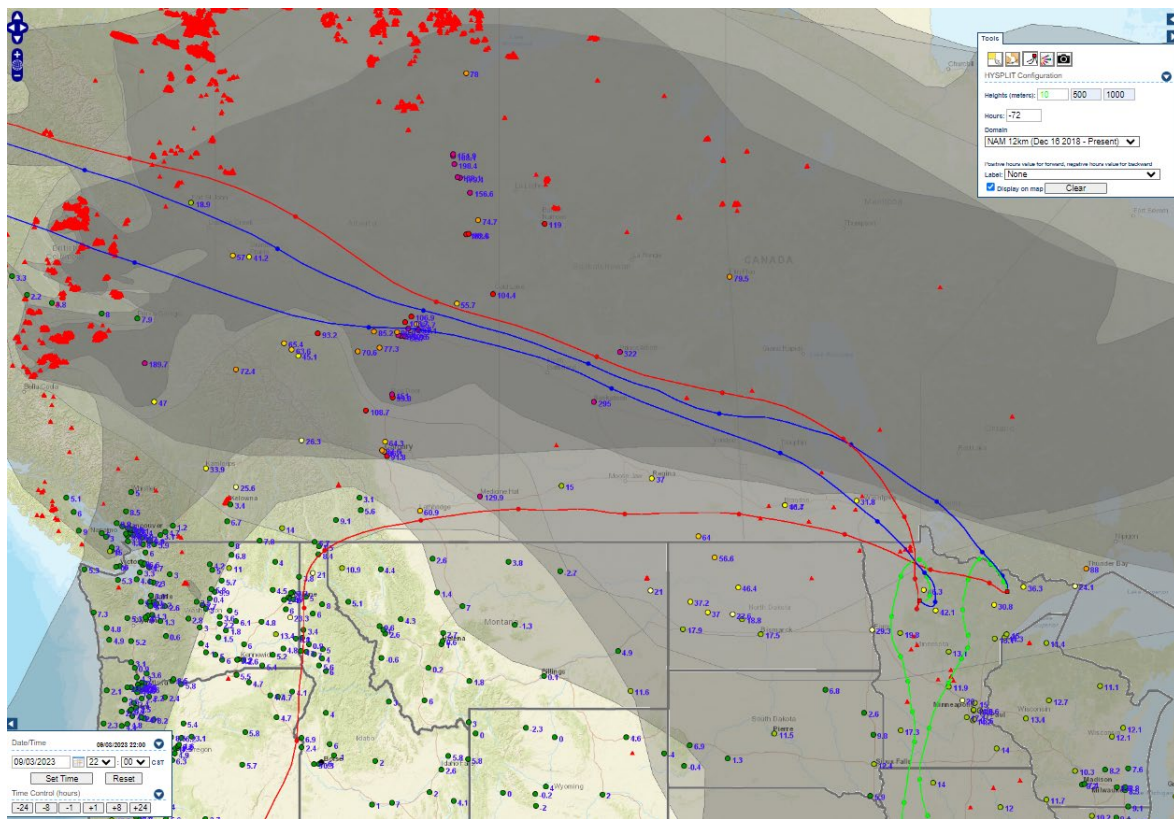
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Ely	270750005	9/3/2023	20.3	38.2	Canada Wildfire Smoke
Fargo NW	380171004	9/3/2023	24.2	37.2	Canada Wildfire Smoke
Grand Portage	270317810	9/3/2023	16.0	71.2	Canada Wildfire Smoke
Leech Lake Nation	270213410	9/3/2023	26.4	46.5	Canada Wildfire Smoke
Red Lake Nation	270072304	9/3/2023	31.1	52.3	Canada Wildfire Smoke
Virginia	271377001	9/3/2023	18.8	34.3	Canada Wildfire Smoke
West Duluth	271377554	9/3/2023	16.0	17	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 3, 2023.



MODIS visible satellite for September 3, 2023.



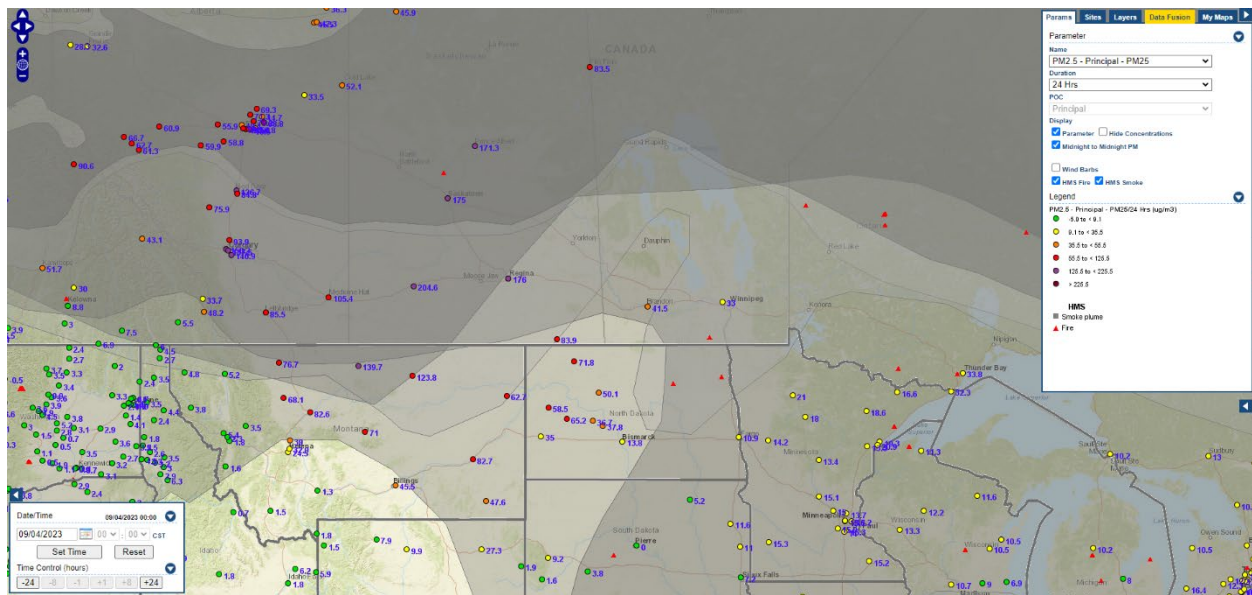
Backward trajectories for September 3, 2023.

9/4/2023 Impacts

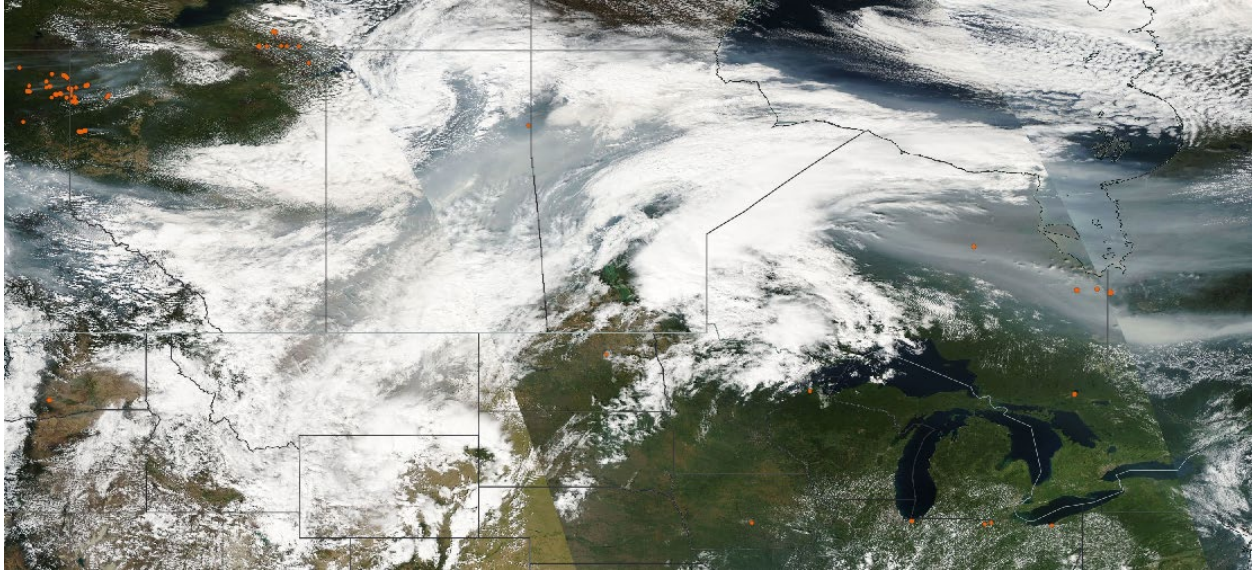
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 4, 2023.

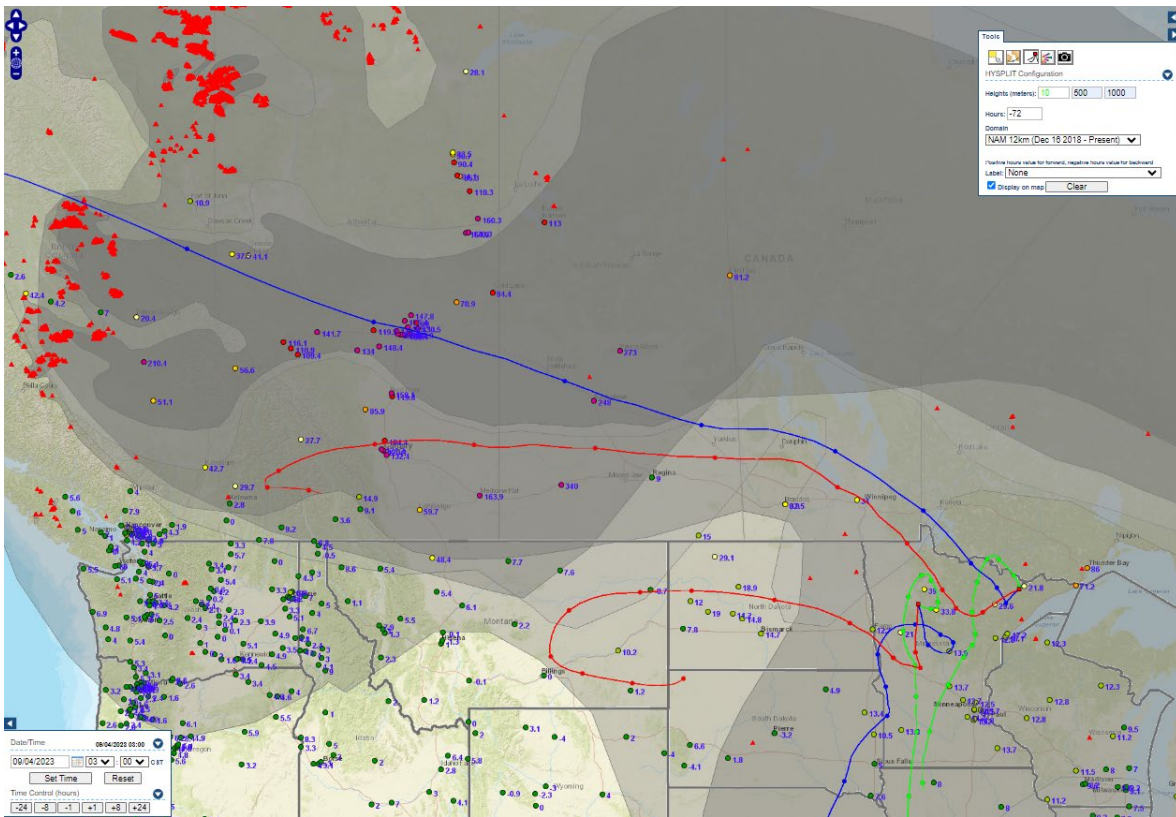
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Duluth-WDSE	271377550	9/4/2023	19.4	29	Canada Wildfire Smoke
Ely	270750005	9/4/2023	16.7	34.3	Canada Wildfire Smoke
Grand Portage	270317810	9/4/2023	32.4	73.6	Canada Wildfire Smoke
Leech Lake Nation	270213410	9/4/2023	18.1	41.5	Canada Wildfire Smoke
Red Lake Nation	270072304	9/4/2023	21.0	45.1	Canada Wildfire Smoke
Virginia	271377001	9/4/2023	18.6	34.5	Canada Wildfire Smoke
West Duluth	271377554	9/4/2023	20.9	36.7	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 4, 2023.



MODIS visible satellite for September 4, 2023.



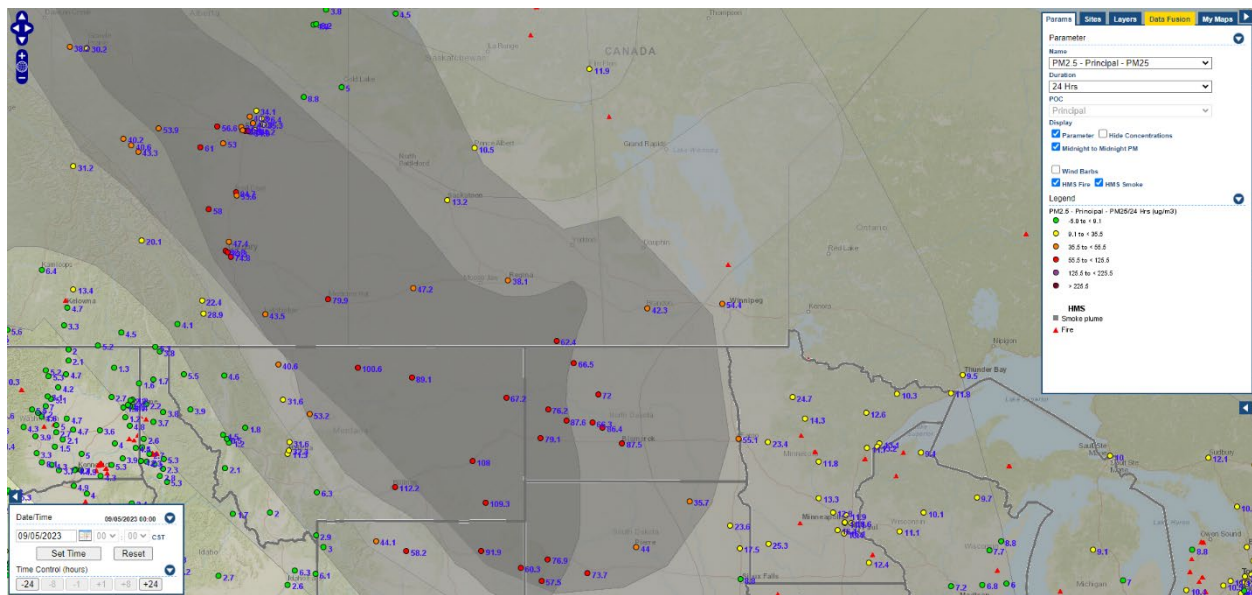
Backward trajectories for September 4, 2023.

9/5/2023 Impacts

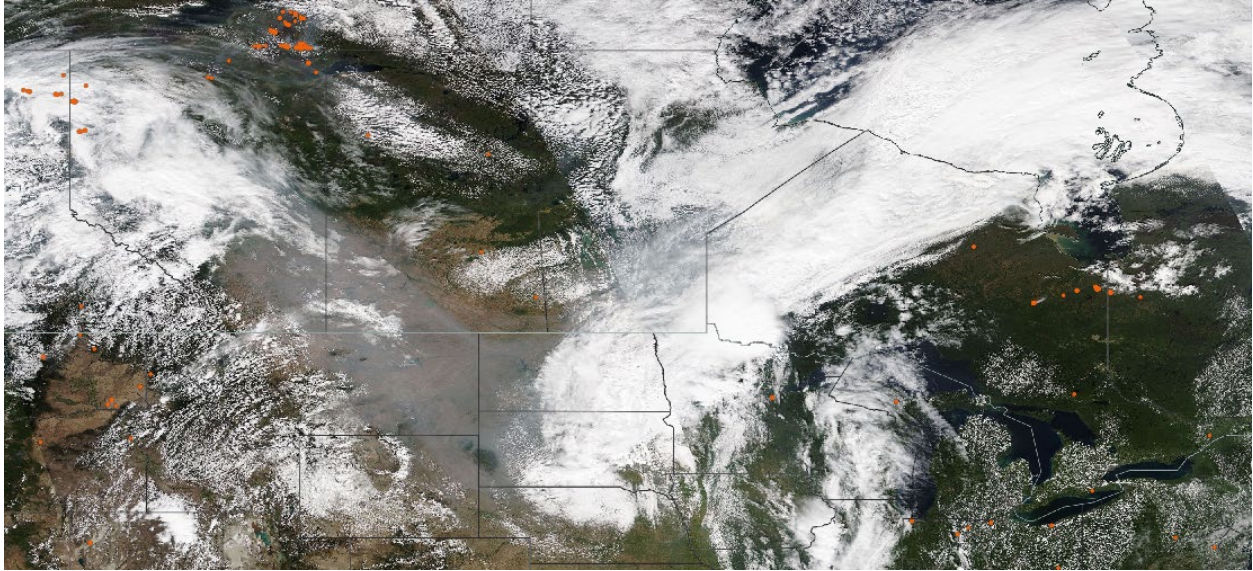
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 5, 2023.

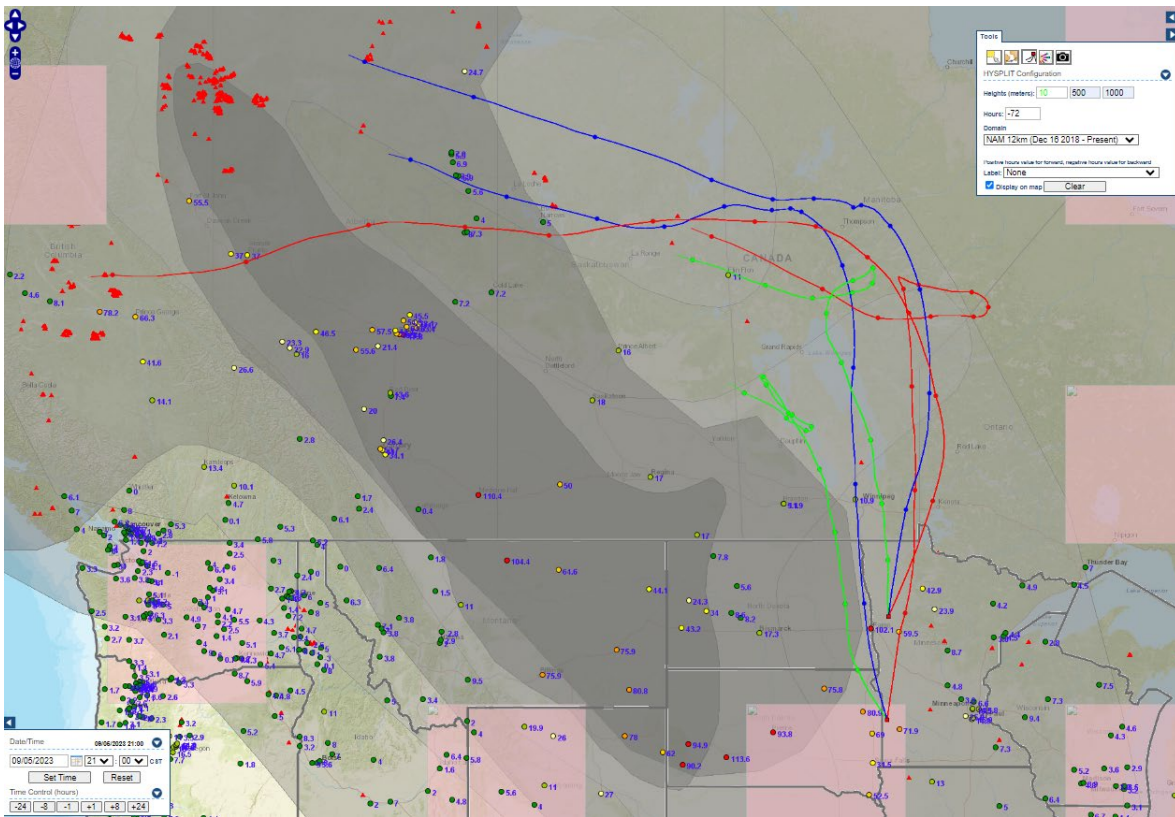
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Detroit Lakes	270052013	9/5/2023	23.4	71.4	Canada Wildfire Smoke
Fargo NW	380171004	9/5/2023	55.1	110.7	Canada Wildfire Smoke
Marshall	270834210	9/5/2023	25.4	93.8	Canada Wildfire Smoke
Red Lake Nation	270072304	9/5/2023	24.8	66.4	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 5, 2023.



MODIS visible satellite for September 5, 2023.



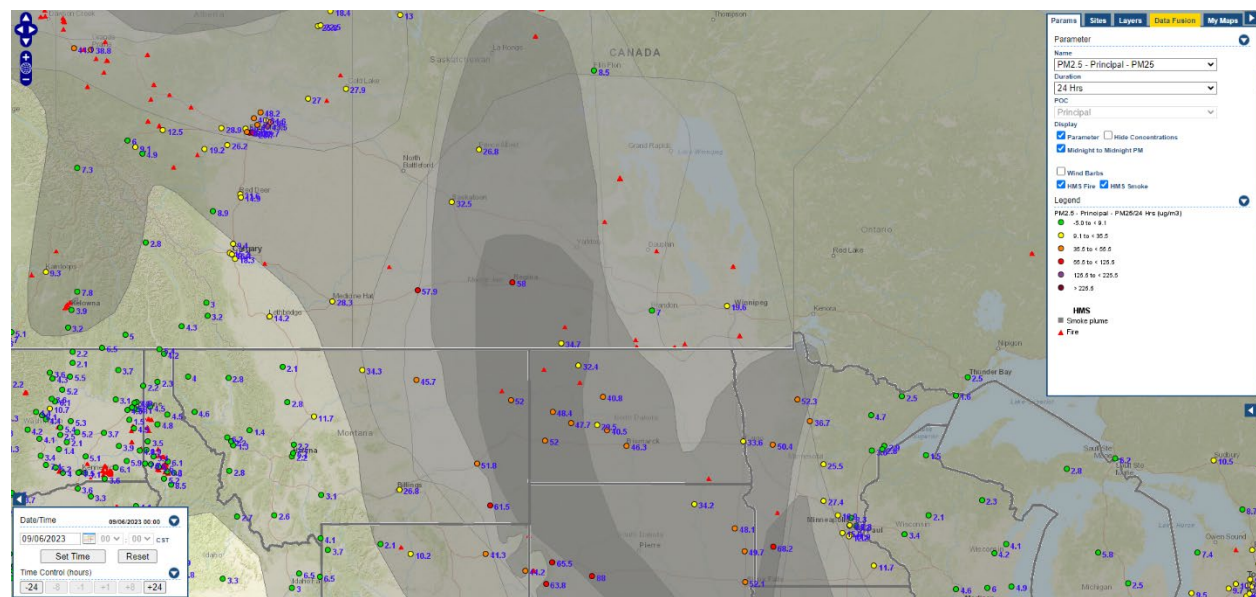
Backward trajectories for September 5, 2023.

9/6/2023 Impacts

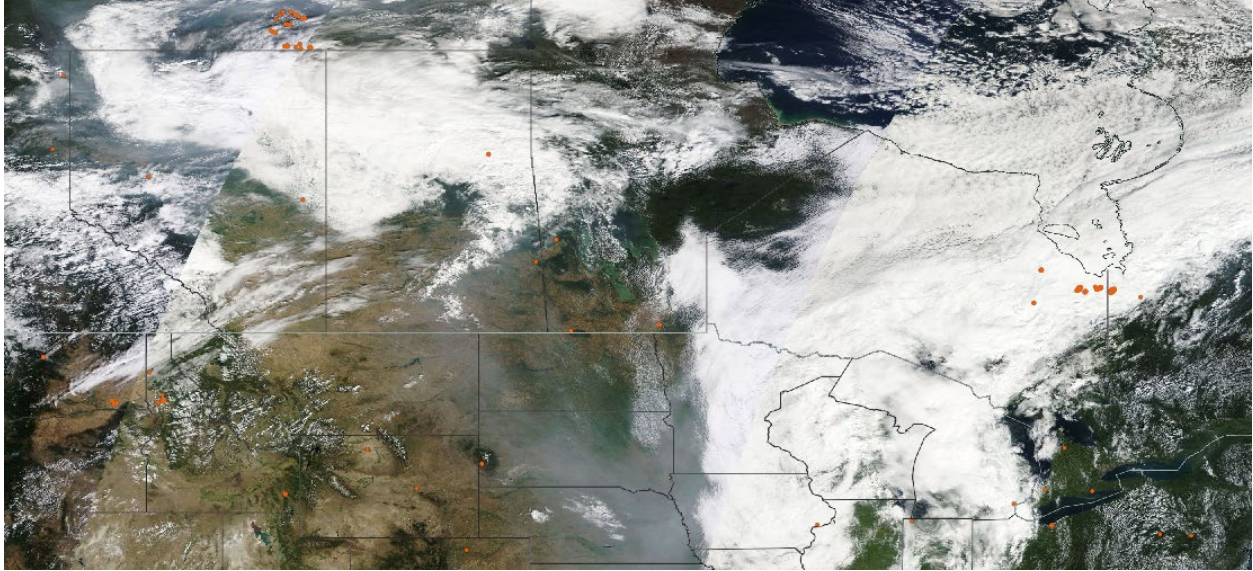
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 6, 2023.

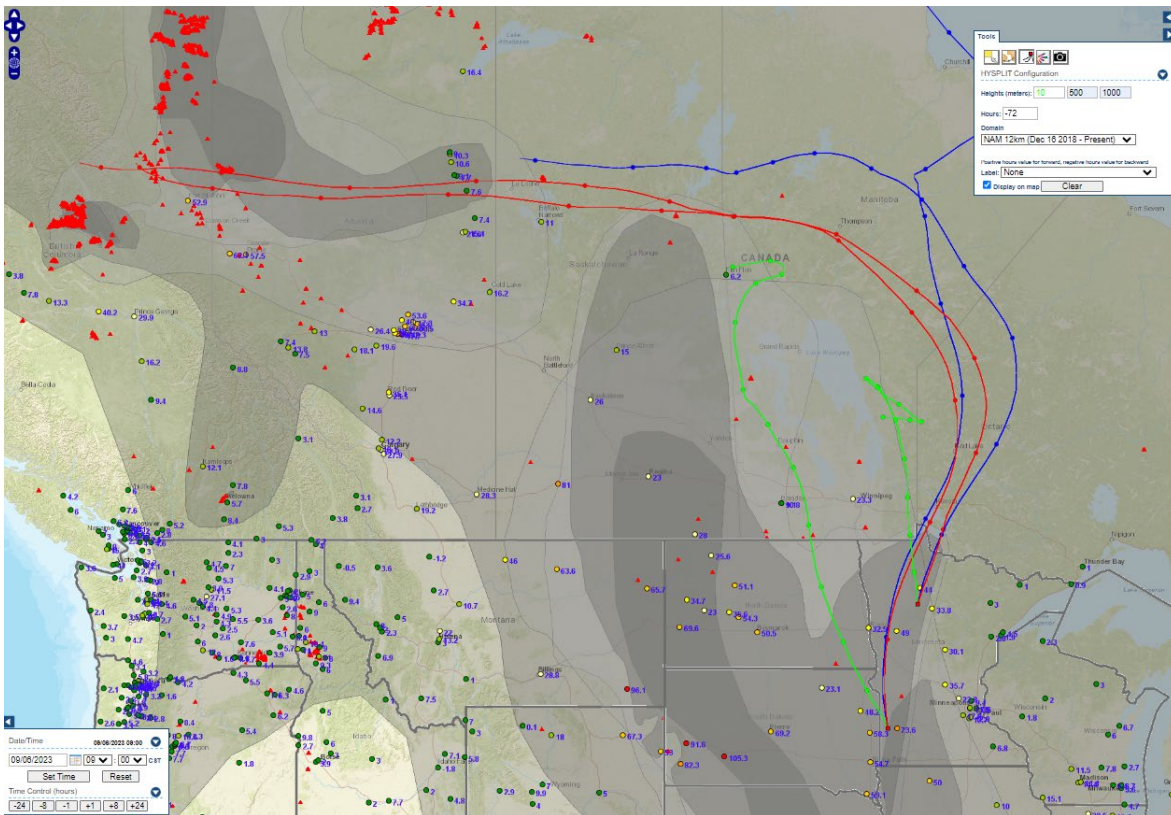
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Brainerd	270353204	9/6/2023	25.6	35.9	Canada Wildfire Smoke
Detroit Lakes	270052013	9/6/2023	50.4	81.6	Canada Wildfire Smoke
Fargo NW	380171004	9/6/2023	33.7	70.1	Canada Wildfire Smoke
Leech Lake Nation	270213410	9/6/2023	36.8	55.8	Canada Wildfire Smoke
Marshall	270834210	9/6/2023	68.2	96.4	Canada Wildfire Smoke
Red Lake Nation	270072304	9/6/2023	52.4	74	Canada Wildfire Smoke
St. Cloud	271453052	9/6/2023	27.5	39.2	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 6, 2023.



MODIS visible satellite for September 6, 2023.



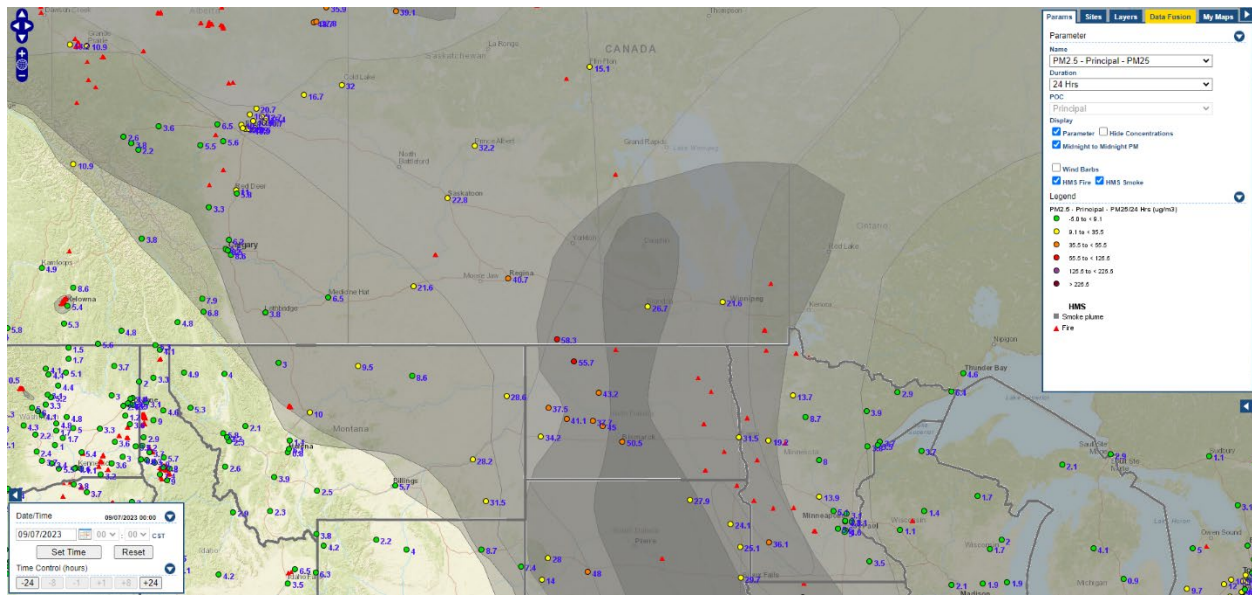
Backward trajectories for September 6, 2023.

9/7/2023 Impacts

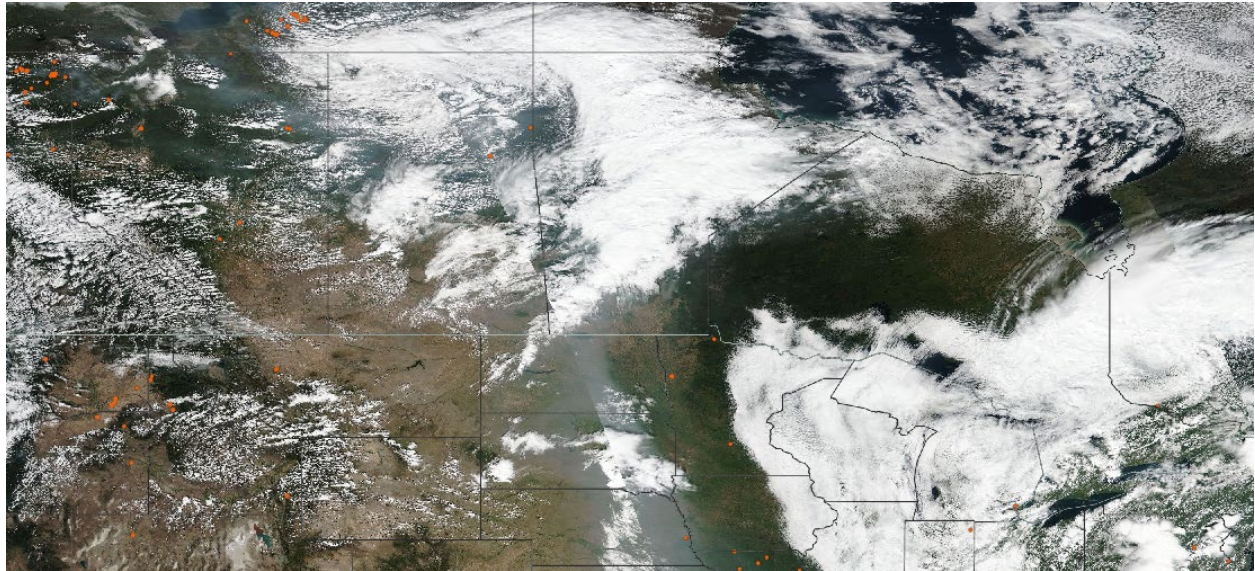
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 7, 2023.

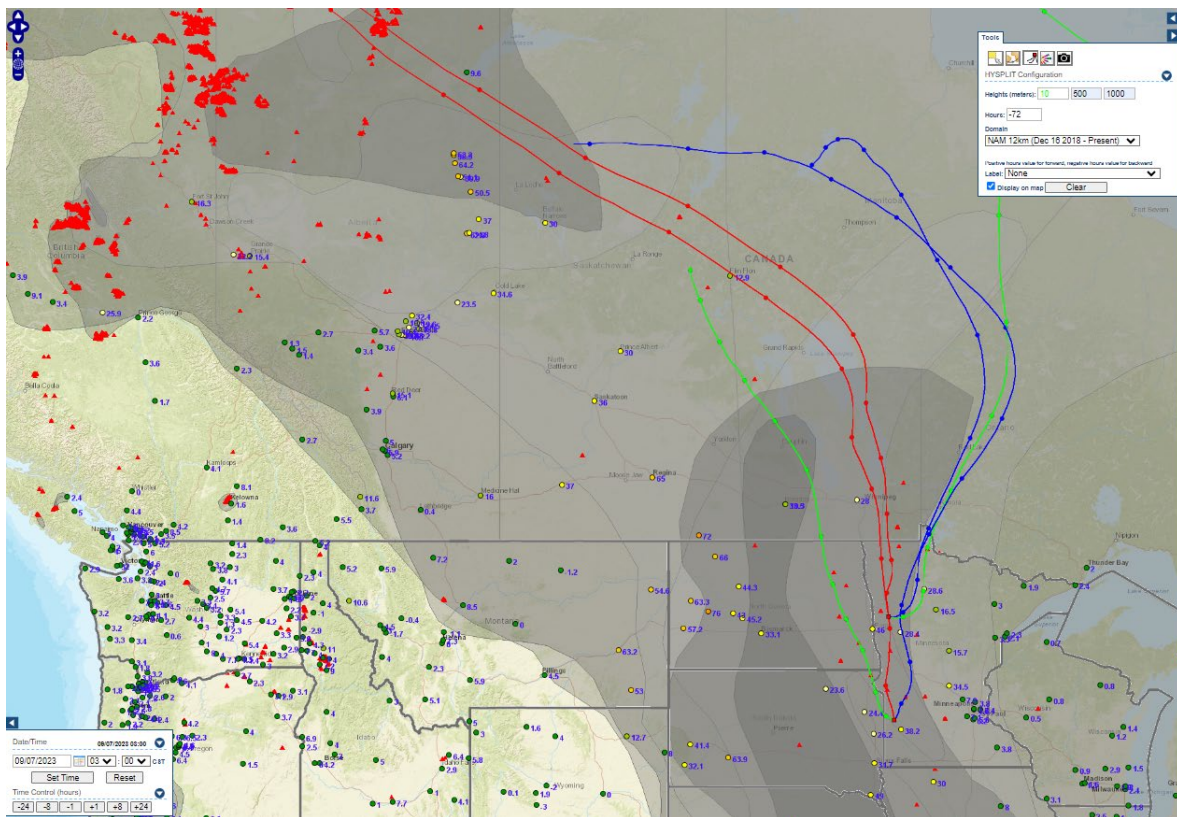
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Detroit Lakes	270052013	9/7/2023	19.2	28.8	Canada Wildfire Smoke
Fargo NW	380171004	9/7/2023	31.5	46	Canada Wildfire Smoke
Marshall	270834210	9/7/2023	36.2	68.7	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 7, 2023.



MODIS visible satellite for September 7, 2023.



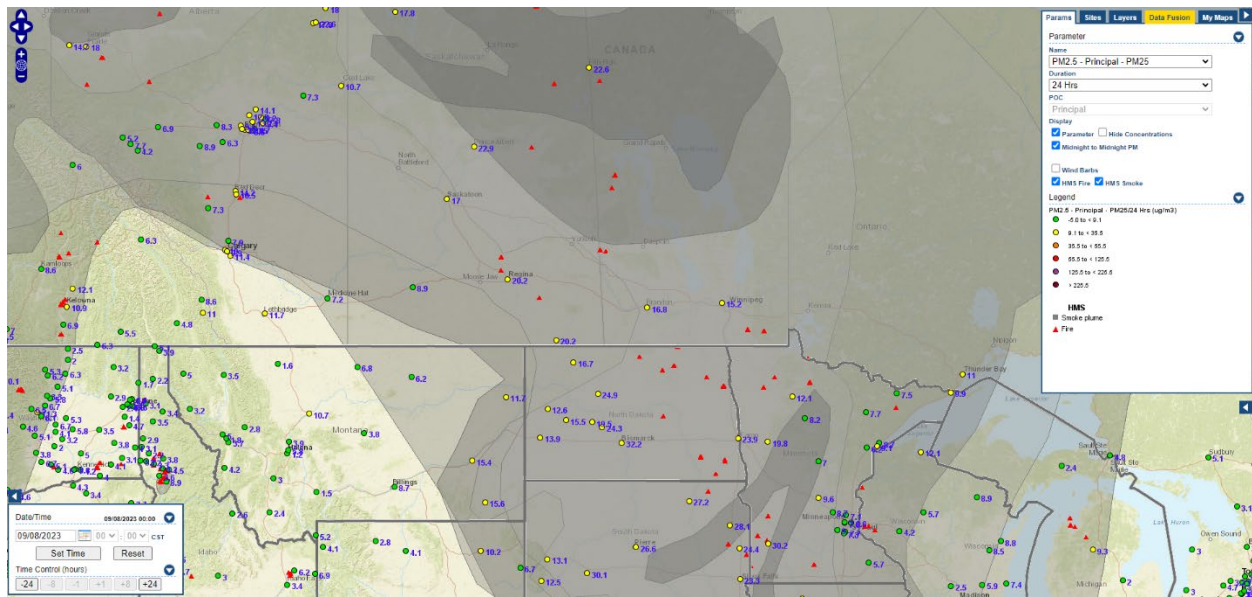
Backward trajectories for September 7, 2023.

9/8/2023 Impacts

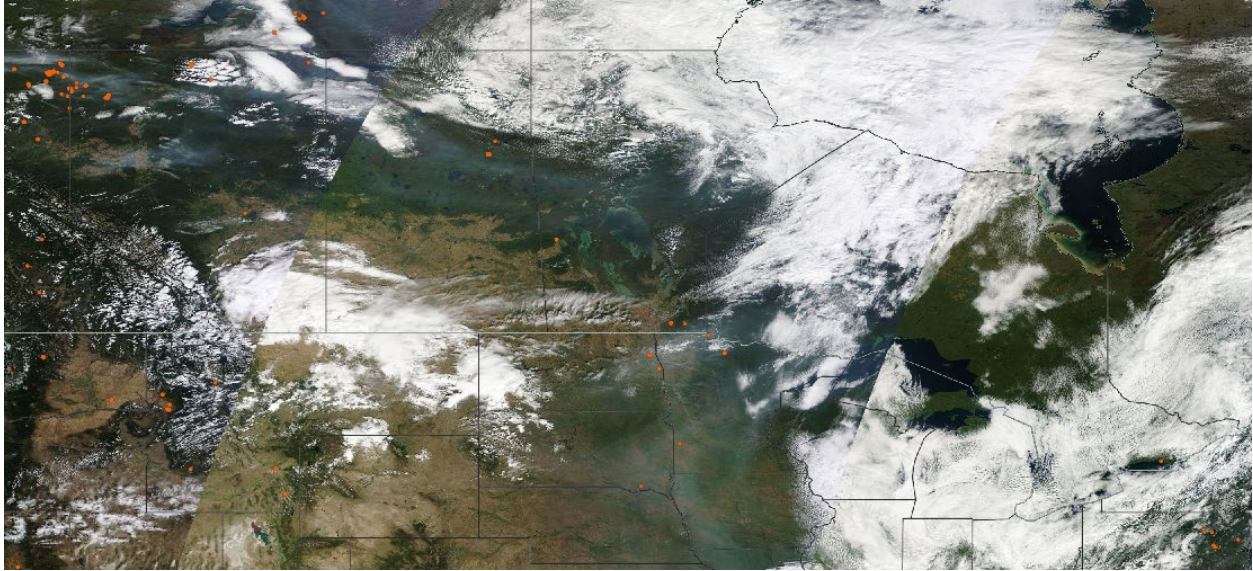
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 8, 2023.

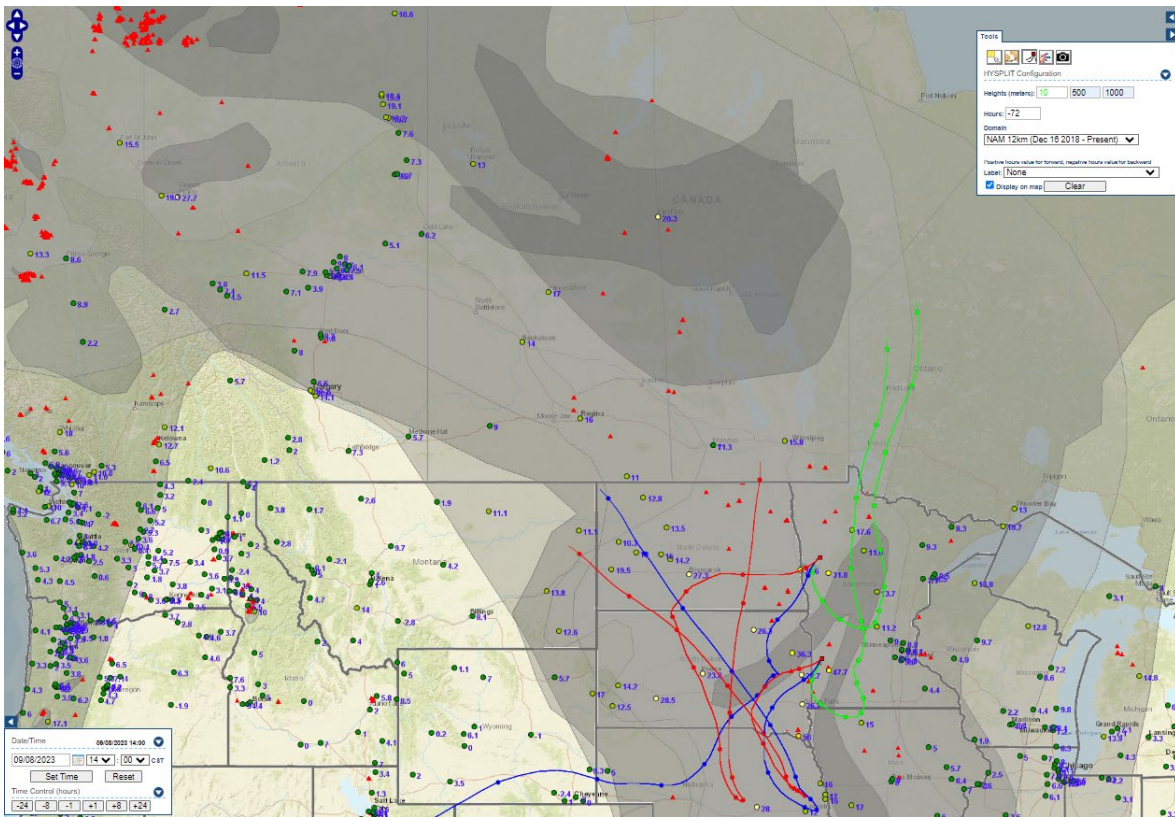
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Detroit Lakes	270052013	9/8/2023	19.8	31.8	Canada Wildfire Smoke
Fargo NW	380171004	9/8/2023	23.9	37.7	Canada Wildfire Smoke
Marshall	270834210	9/8/2023	30.3	47.7	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 8, 2023.



MODIS visible satellite for September 8, 2023.



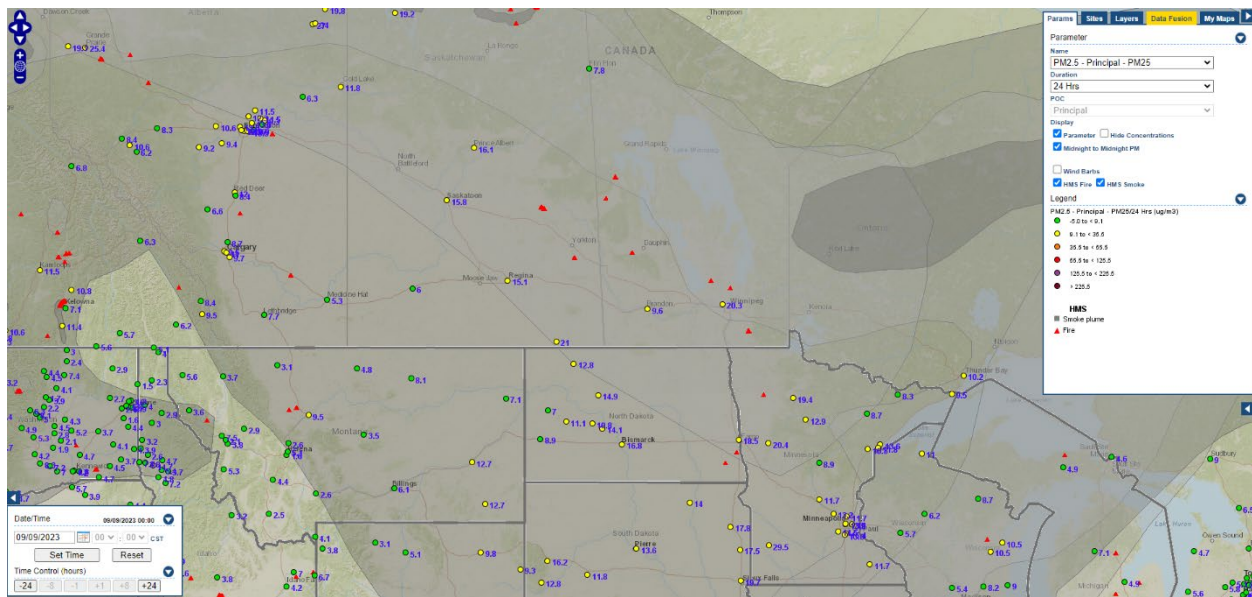
Backward trajectories for September 8, 2023.

9/9/2023 Impacts

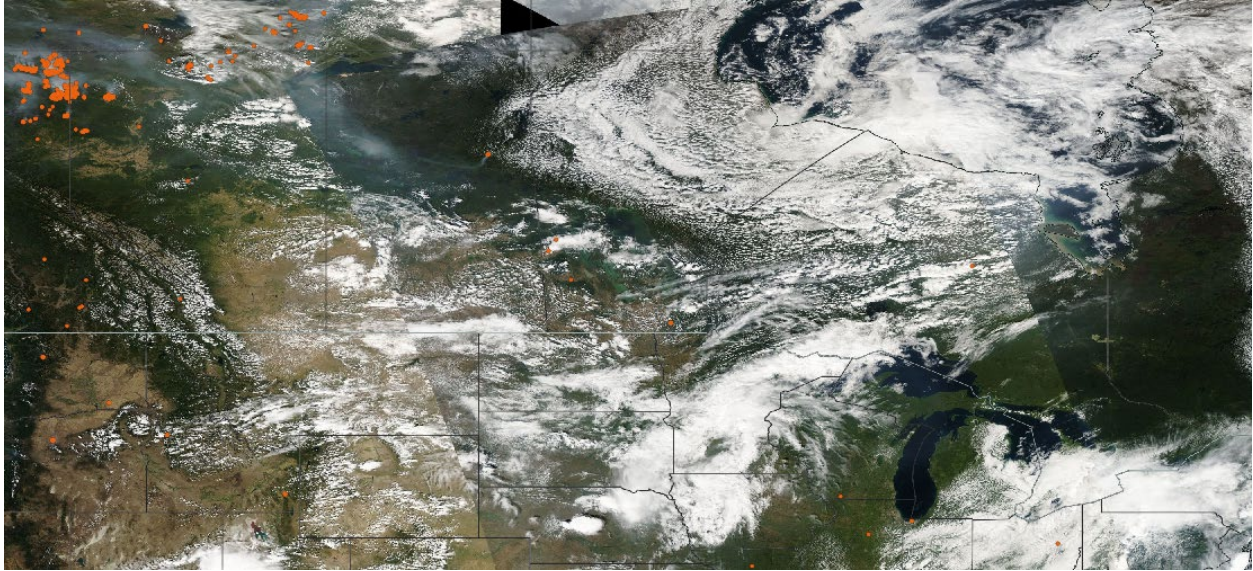
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 9, 2023.

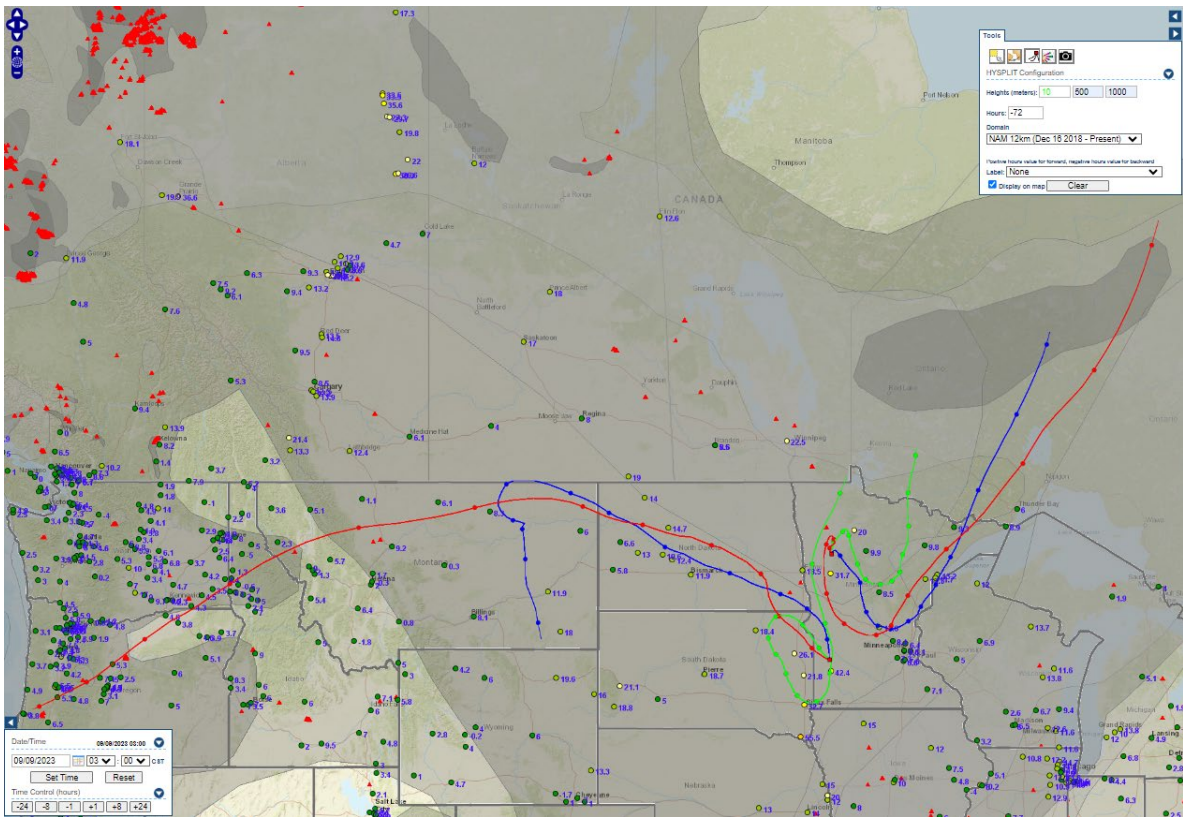
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Detroit Lakes	270052013	9/9/2023	20.5	31.7	Canada Wildfire Smoke
Marshall	270834210	9/9/2023	29.6	43.8	Canada Wildfire Smoke
Red Lake Nation	270072304	9/9/2023	19.4	24.8	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 9, 2023.



MODIS visible satellite for September 9, 2023.



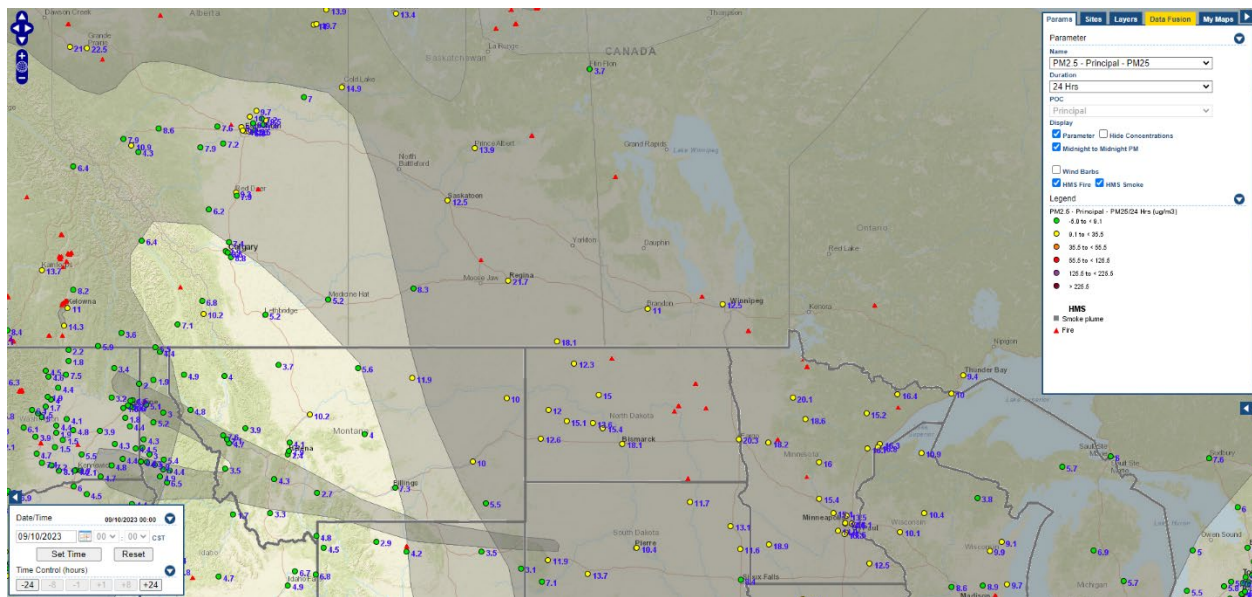
Backward trajectories for September 9, 2023.

9/10/2023 Impacts

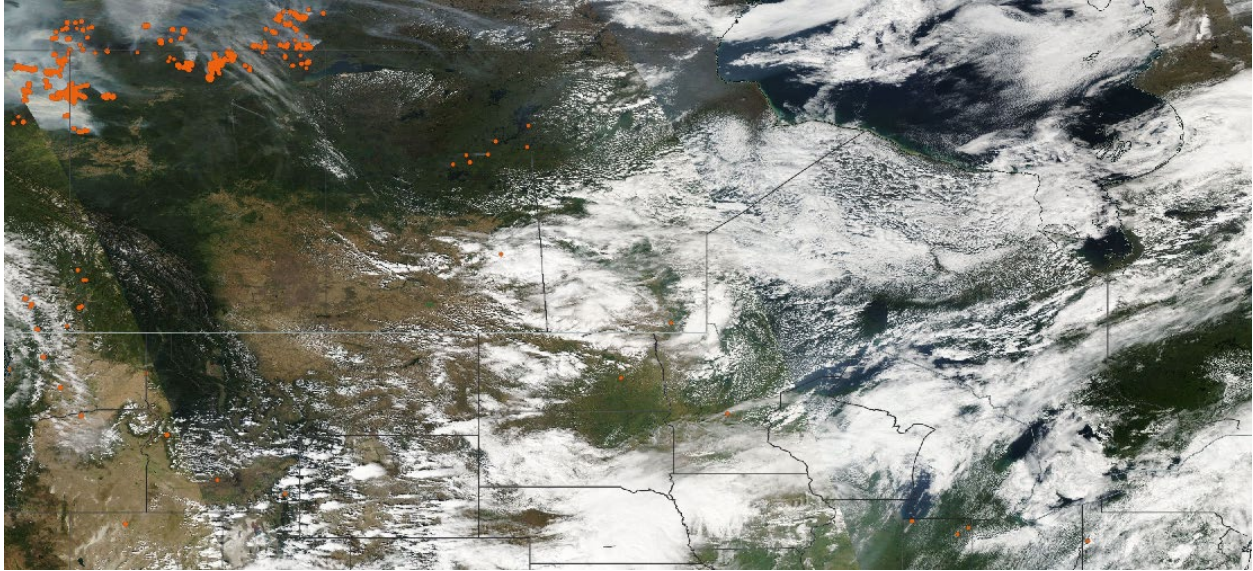
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 10, 2023.

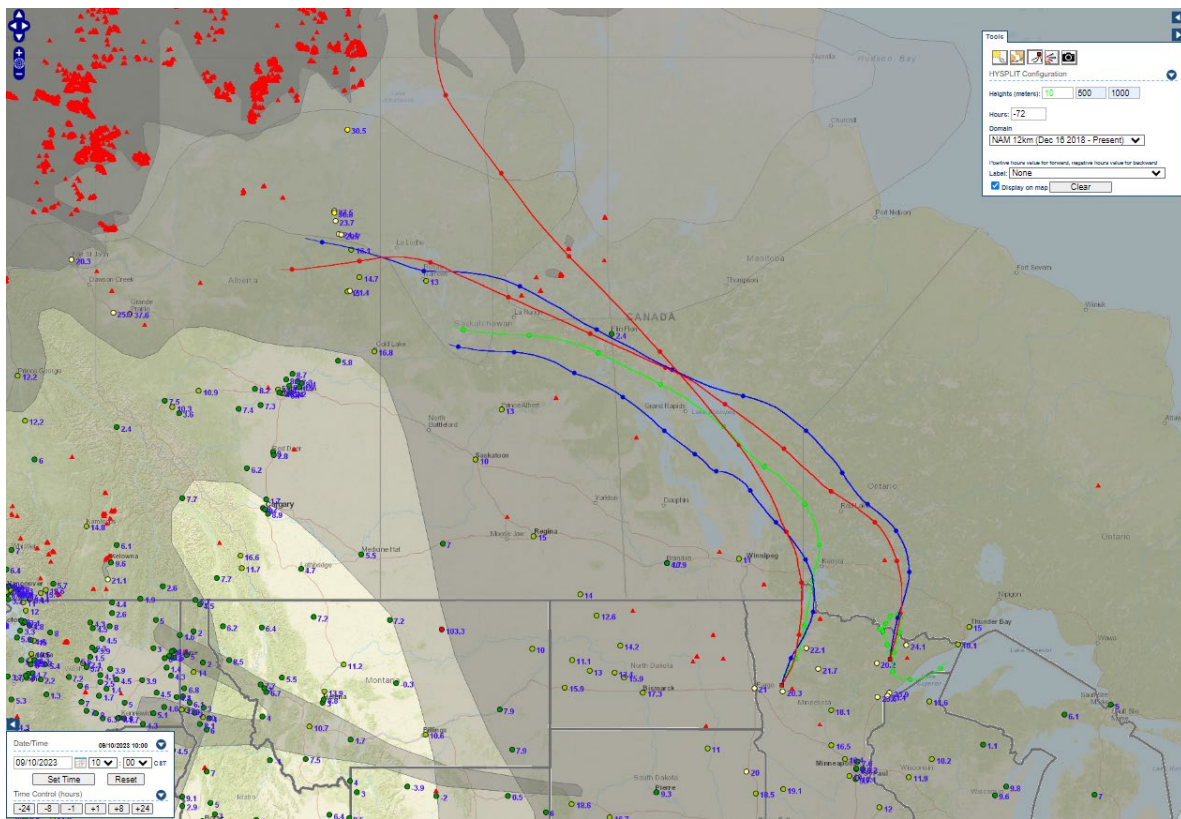
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Detroit Lakes	270052013	9/10/2023	18.2	22.4	Canada Wildfire Smoke
Ely	270750005	9/10/2023	16.4	24.1	Canada Wildfire Smoke
Fargo NW	380171004	9/10/2023	20.3	23.1	Canada Wildfire Smoke
Leech Lake Nation	270213410	9/10/2023	18.6	21.7	Canada Wildfire Smoke
Marshall	270834210	9/10/2023	18.9	24.6	Canada Wildfire Smoke
Red Lake Nation	270072304	9/10/2023	20.2	24.1	Canada Wildfire Smoke
West Duluth	271377554	9/10/2023	16.8	27.4	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 10, 2023.



MODIS visible satellite for September 10, 2023.



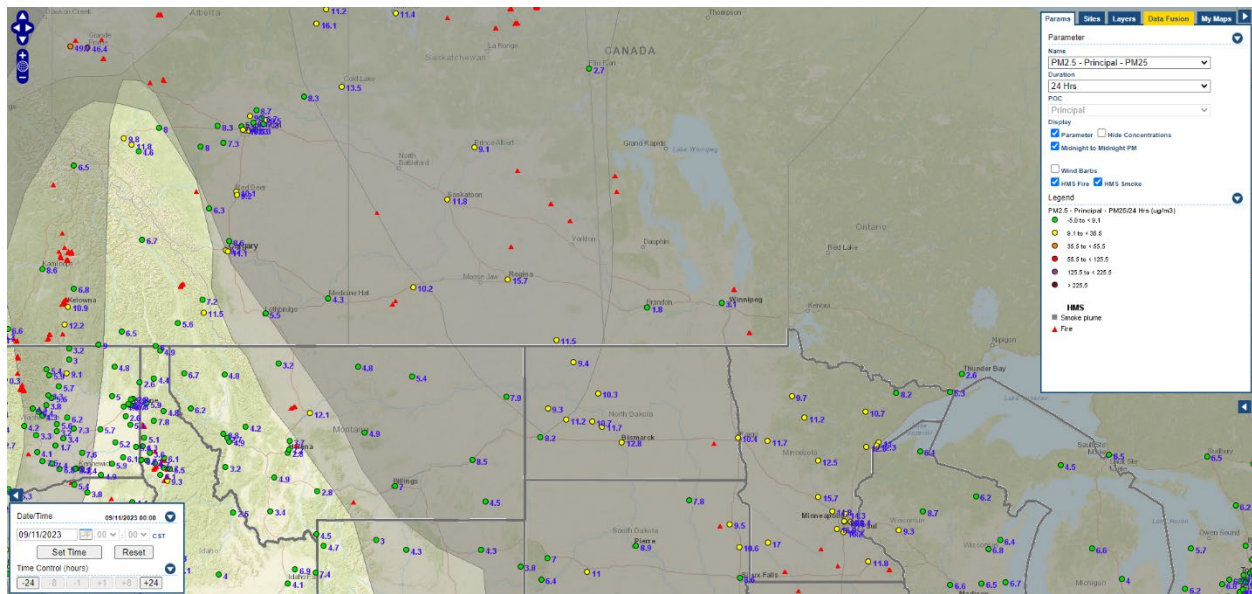
Backward trajectories for September 10, 2023.

9/11/2023 Impacts

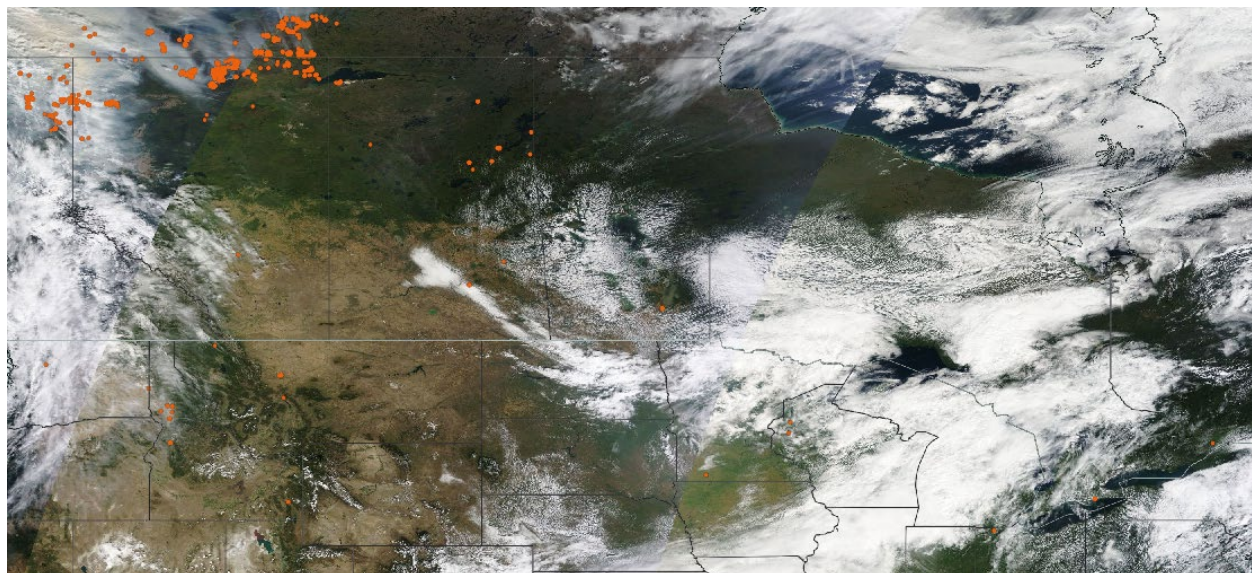
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 11, 2023.

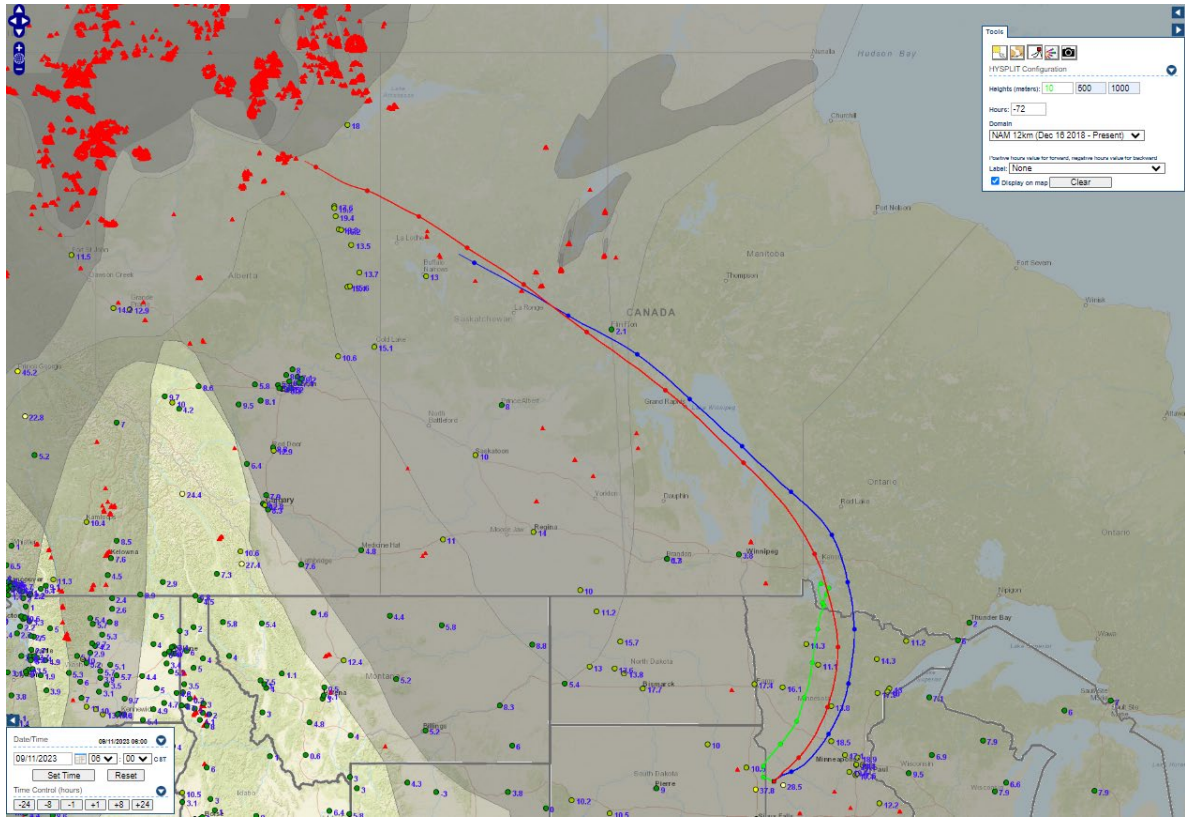
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Marshall	270834210	9/11/2023	17.1	28.5	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 11, 2023.



MODIS visible satellite for September 11, 2023.



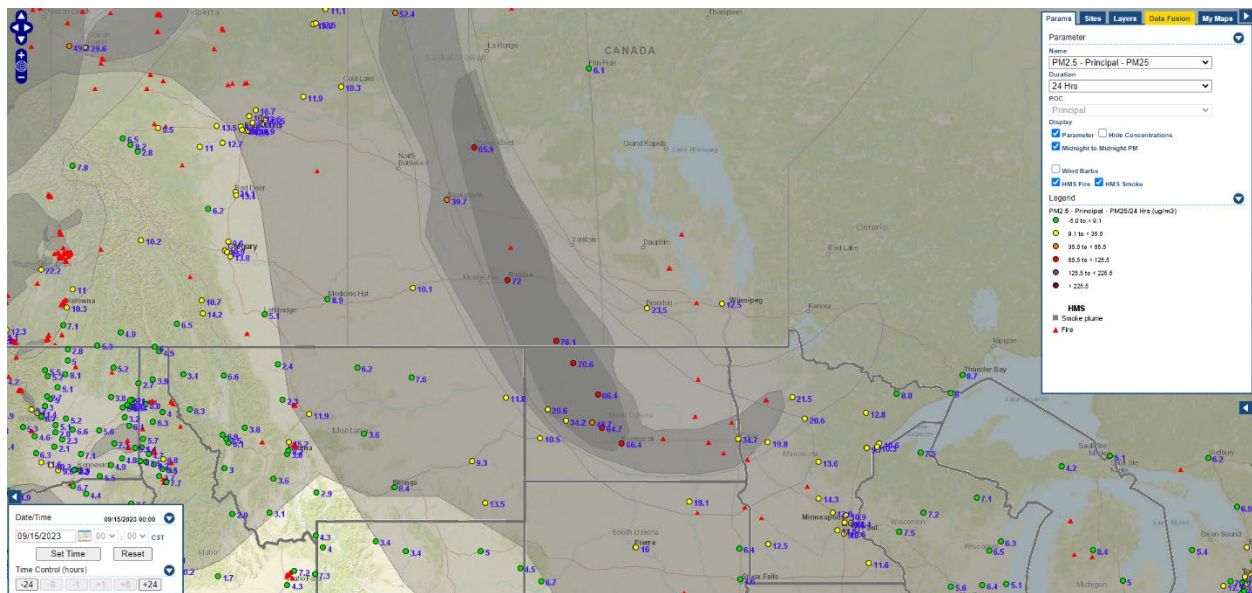
Backward trajectories for September 11, 2023.

9/15/2023 Impacts

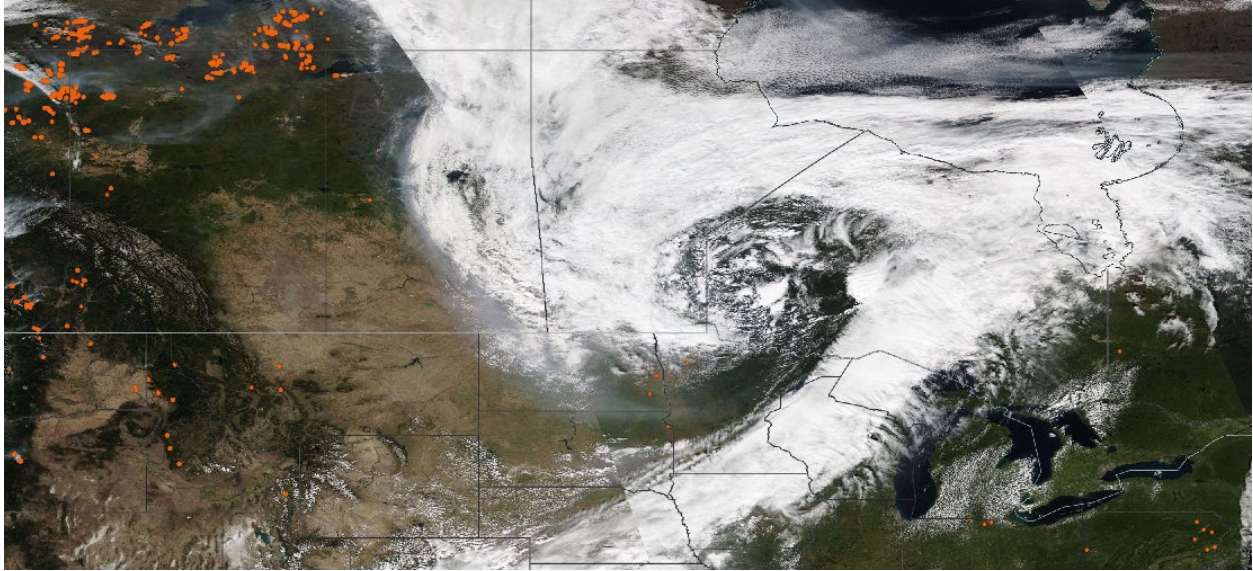
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 15, 2023.

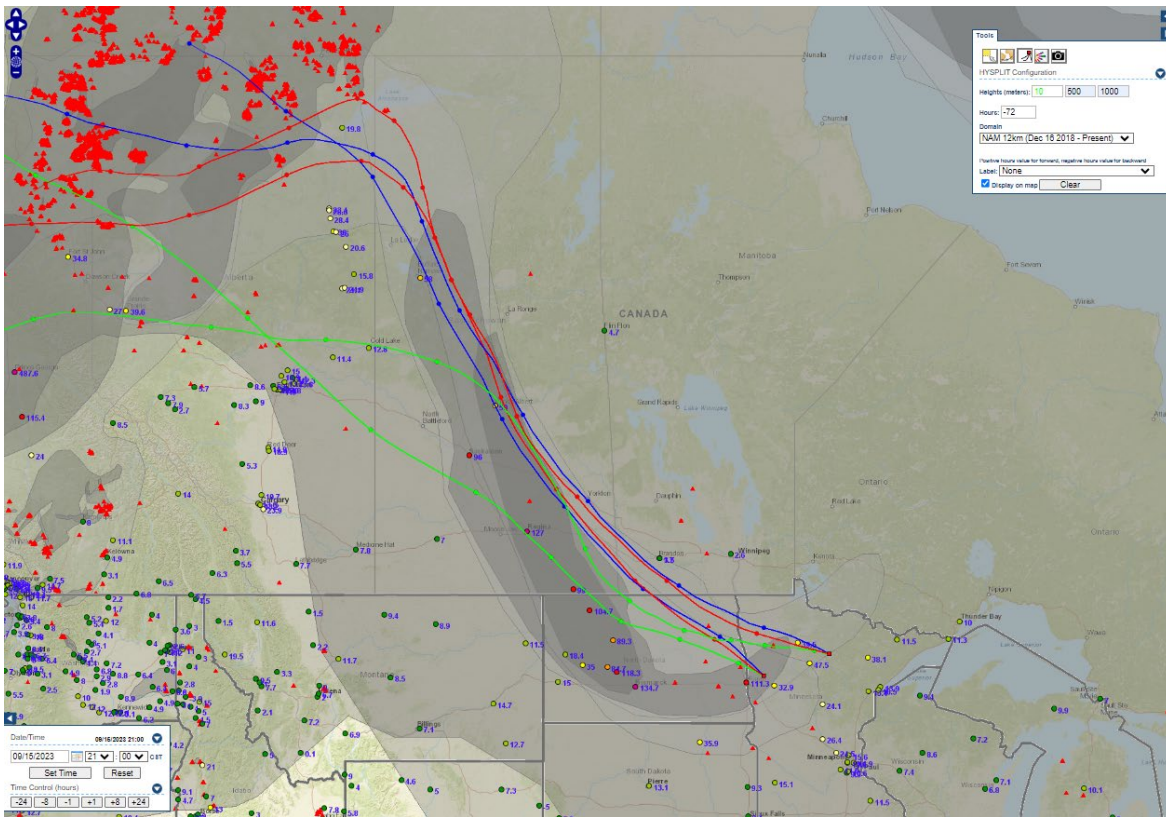
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Detroit Lakes	270052013	9/15/2023	19.9	32.9	Canada Wildfire Smoke
Fargo NW	380171004	9/15/2023	34.7	115.5	Canada Wildfire Smoke
Leech Lake Nation	270213410	9/15/2023	20.7	47.8	Canada Wildfire Smoke
Red Lake Nation	270072304	9/15/2023	21.5	51.9	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 15, 2023.



MODIS visible satellite for September 15, 2023.



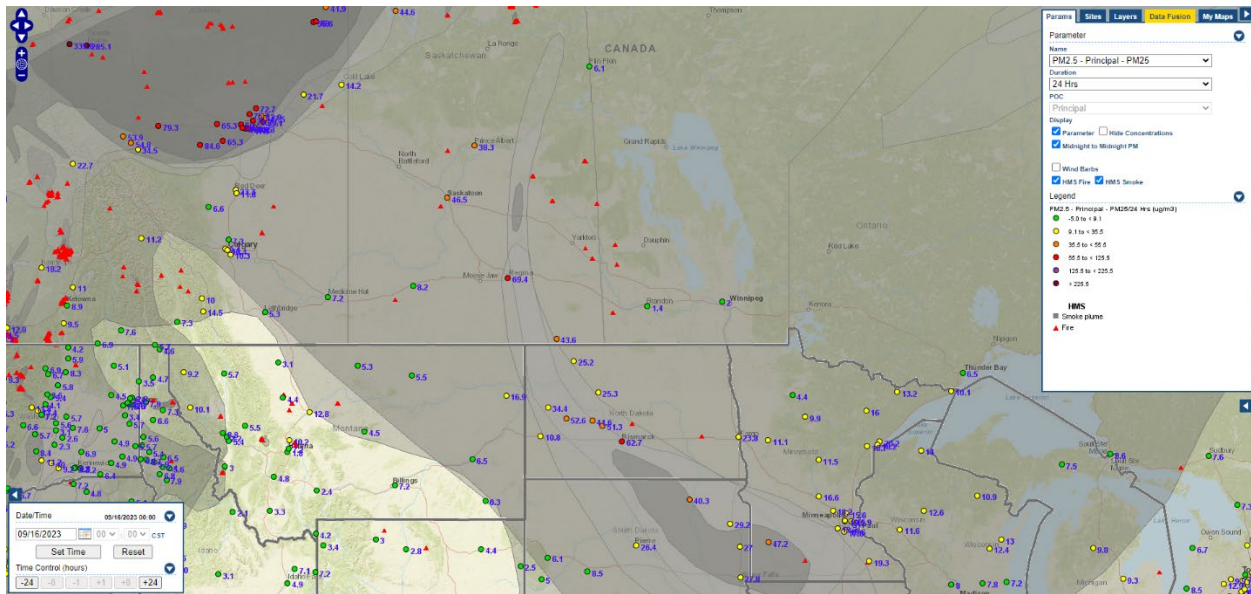
Backward trajectories for September 15, 2023.

9/16/2023 Impacts

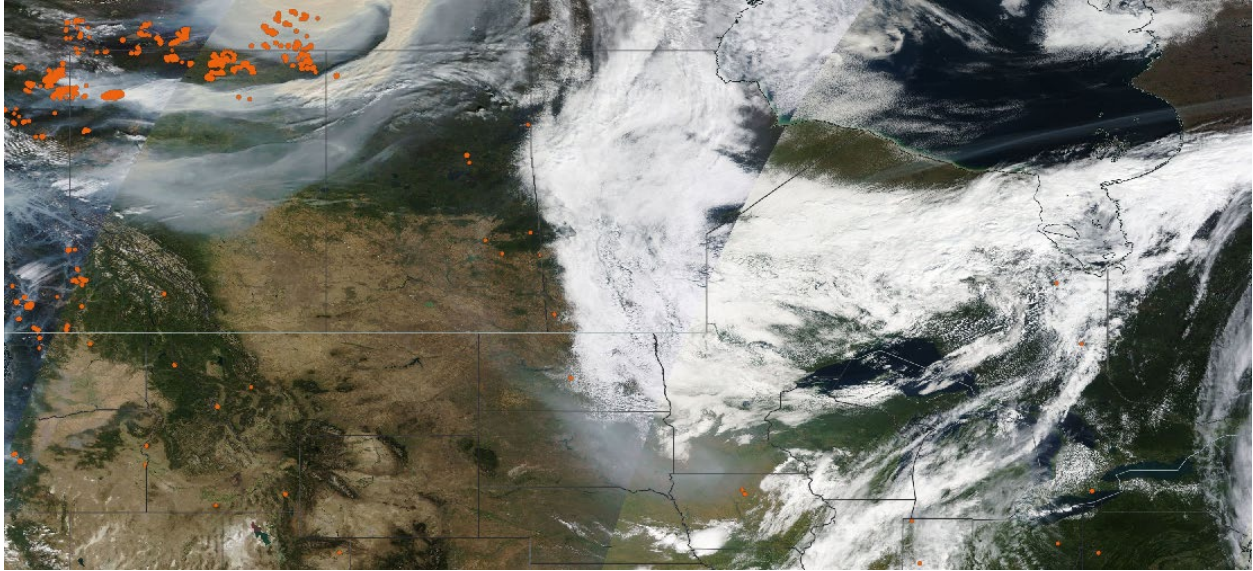
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 16, 2023.

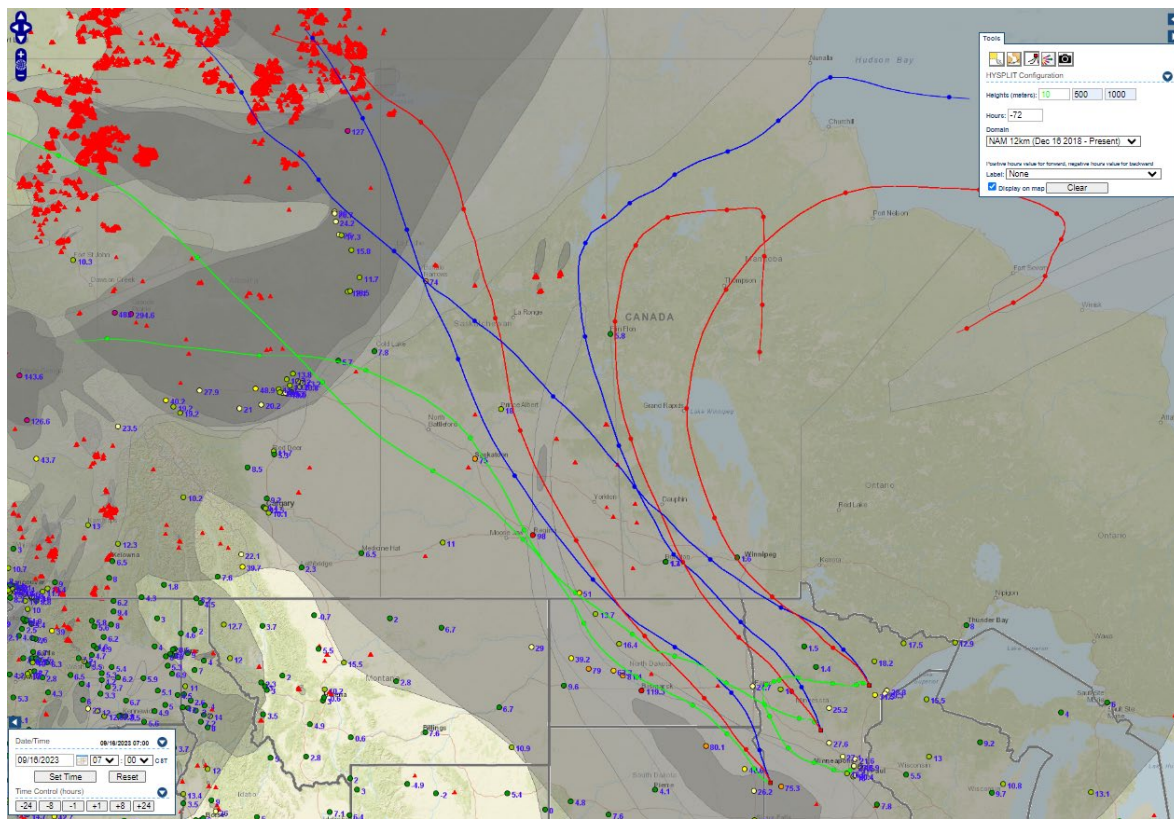
Site	Site AQS	Date (LST)	Daily average (µg/m3)	Max hour (µg/m3)	Notes
Apple Valley	270370470	9/16/2023	19.7	41.2	Canada Wildfire Smoke
Duluth-WDSE	271377550	9/16/2023	20.3	28.8	Canada Wildfire Smoke
Fargo NW	380171004	9/16/2023	23.8	97.1	Canada Wildfire Smoke
Fond du Lac	270177417	9/16/2023	18.7	32.4	Canada Wildfire Smoke
Marshall	270834210	9/16/2023	47.3	83.4	Canada Wildfire Smoke
Minneapolis - Phillips	270530963	9/16/2023	19.9	36.5	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	9/16/2023	19.5	34.7	Canada Wildfire Smoke
Rochester	271095008	9/16/2023	19.3	36.1	Canada Wildfire Smoke
Shakopee	271390505	9/16/2023	19.3	37	Canada Wildfire Smoke
West Duluth	271377554	9/16/2023	18.3	29.3	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 16, 2023.



MODIS visible satellite for September 16, 2023.



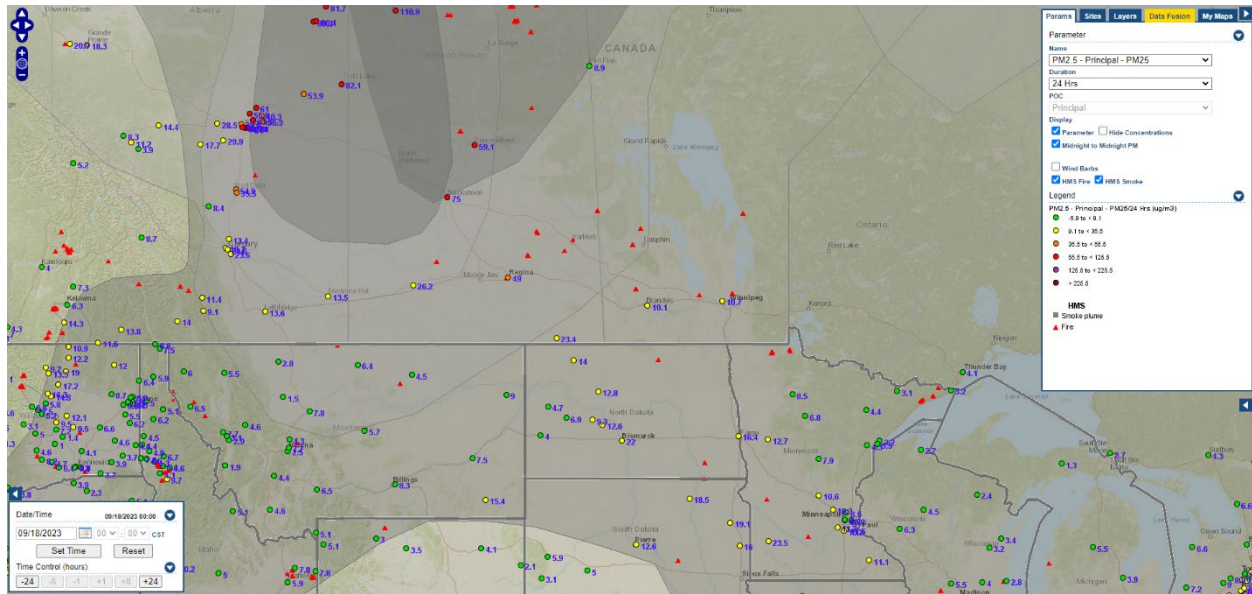
Backward trajectories for September 16, 2023.

9/18/2023 Impacts

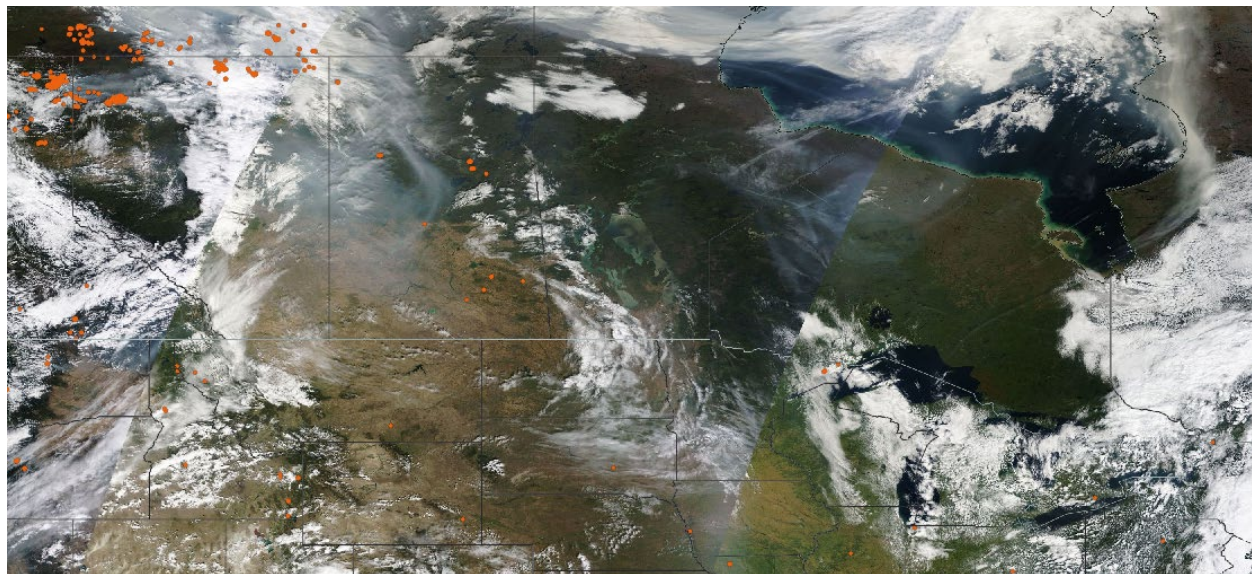
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 18, 2023.

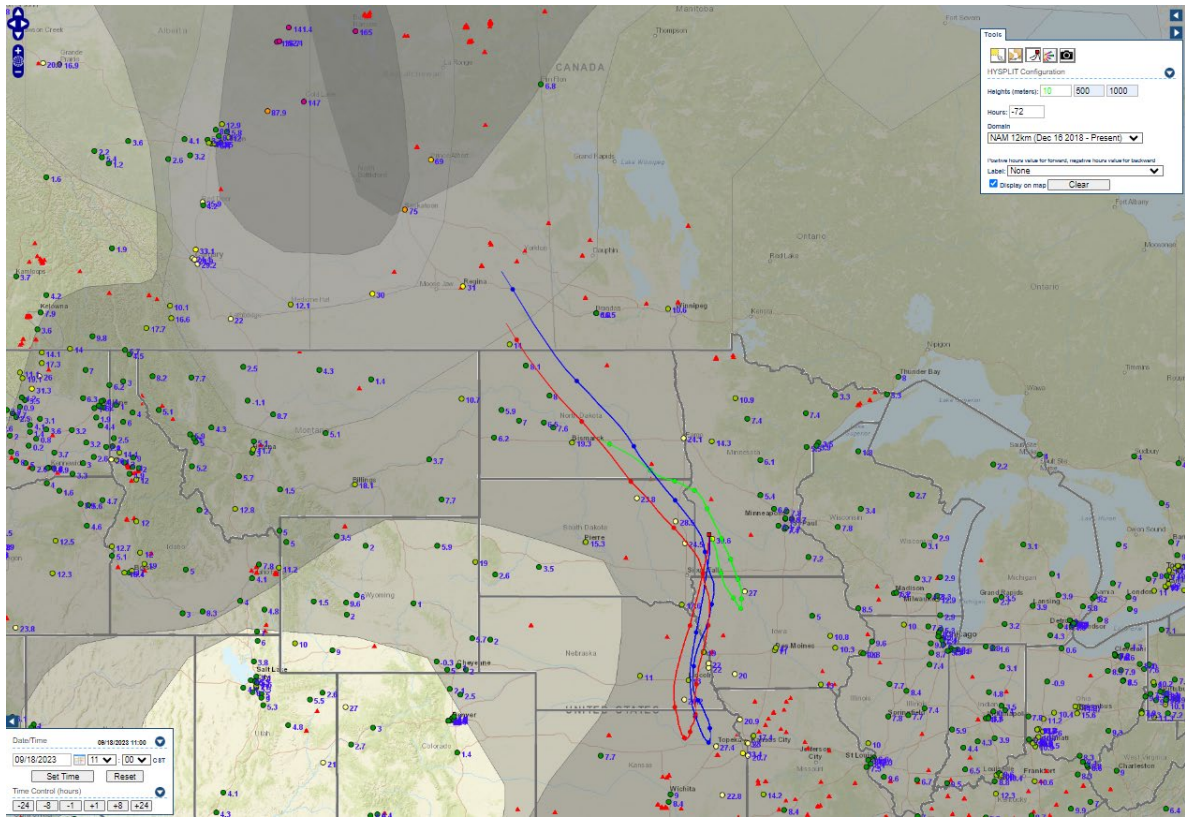
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Marshall	270834210	9/18/2023	23.5	39.9	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 18, 2023.



MODIS visible satellite for September 18, 2023.



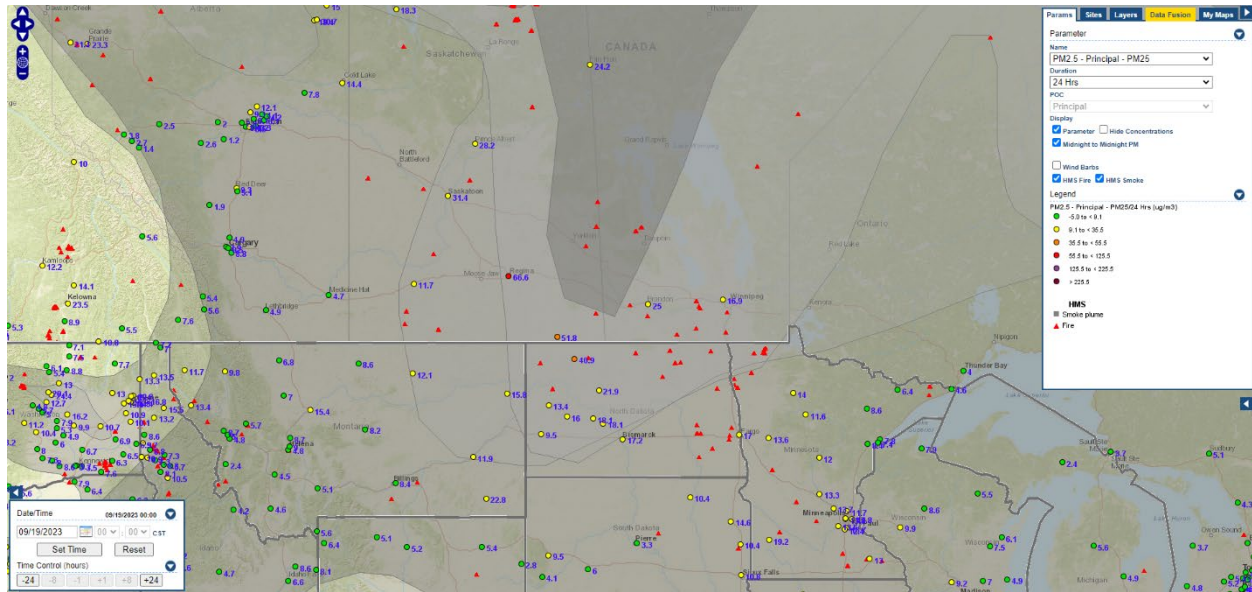
Backward trajectories for September 18, 2023.

9/19/2023 Impacts

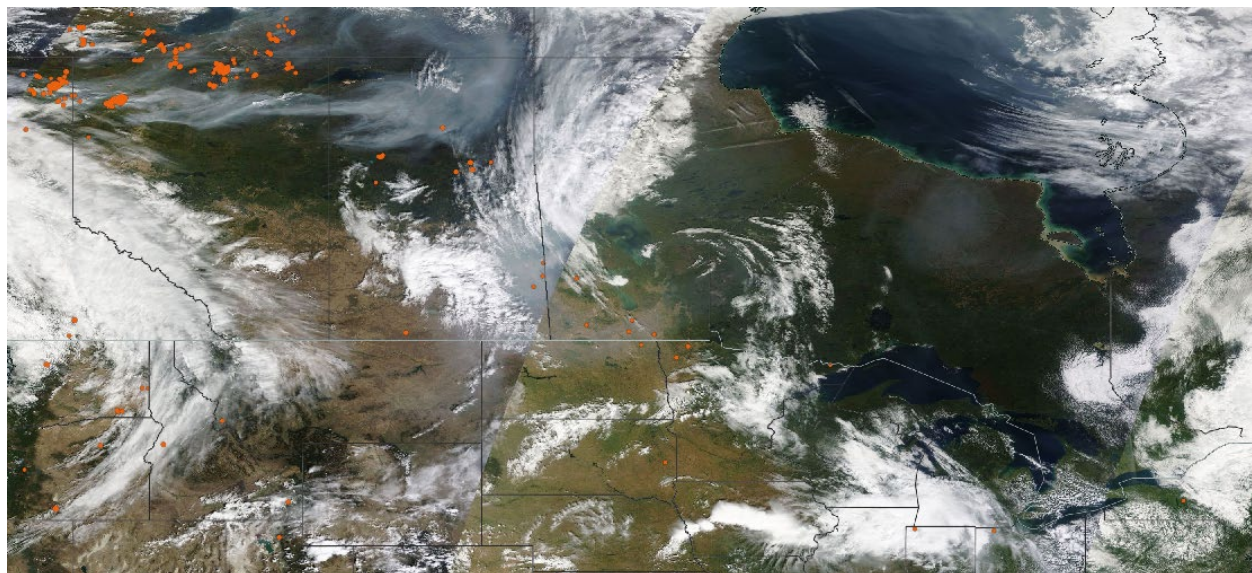
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 19, 2023.

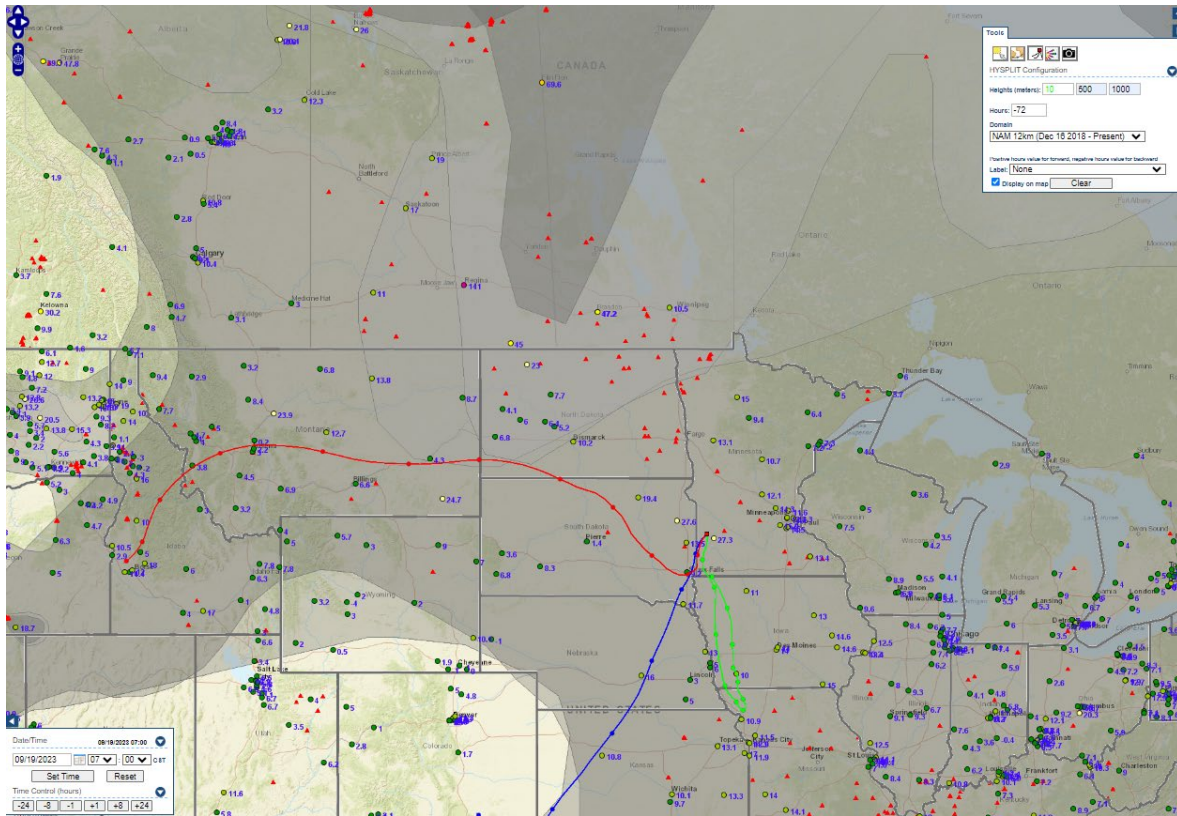
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Marshall	270834210	9/19/2023	19.2	27.9	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 19, 2023.



MODIS visible satellite for September 19, 2023.



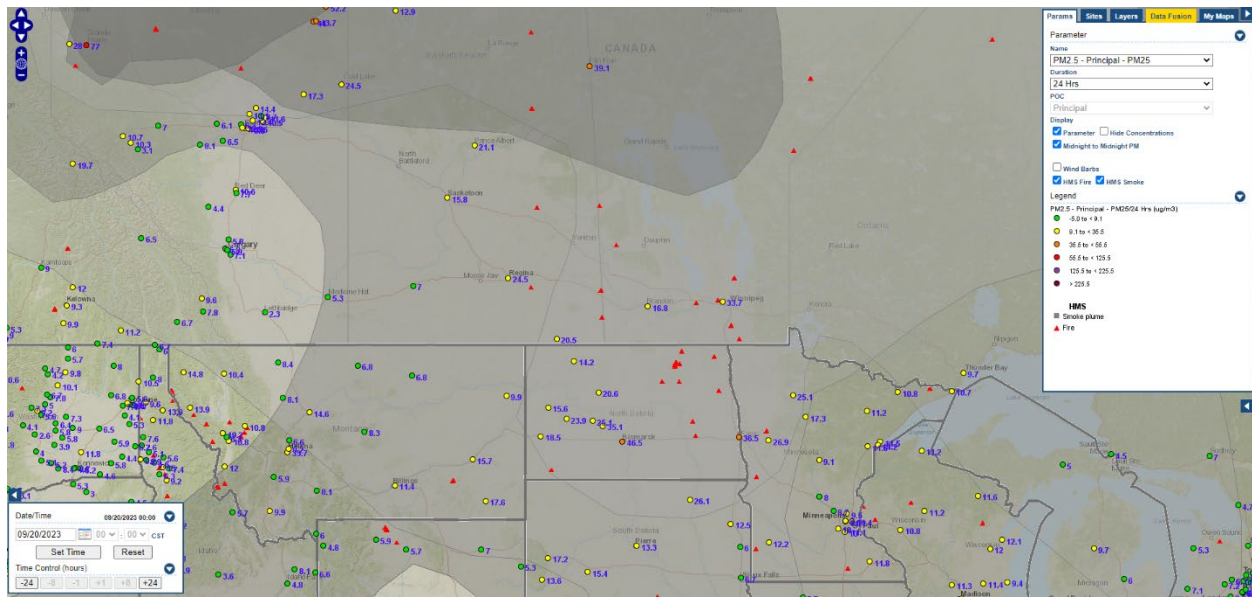
Backward trajectories for September 19, 2023.

9/20/2023 Impacts

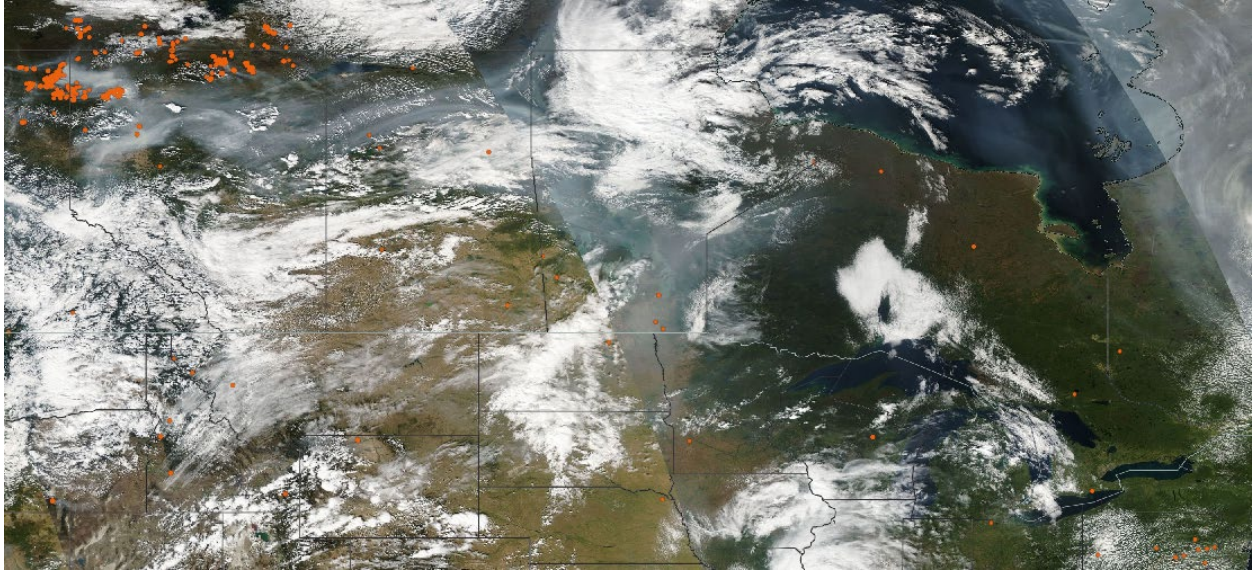
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 20, 2023.

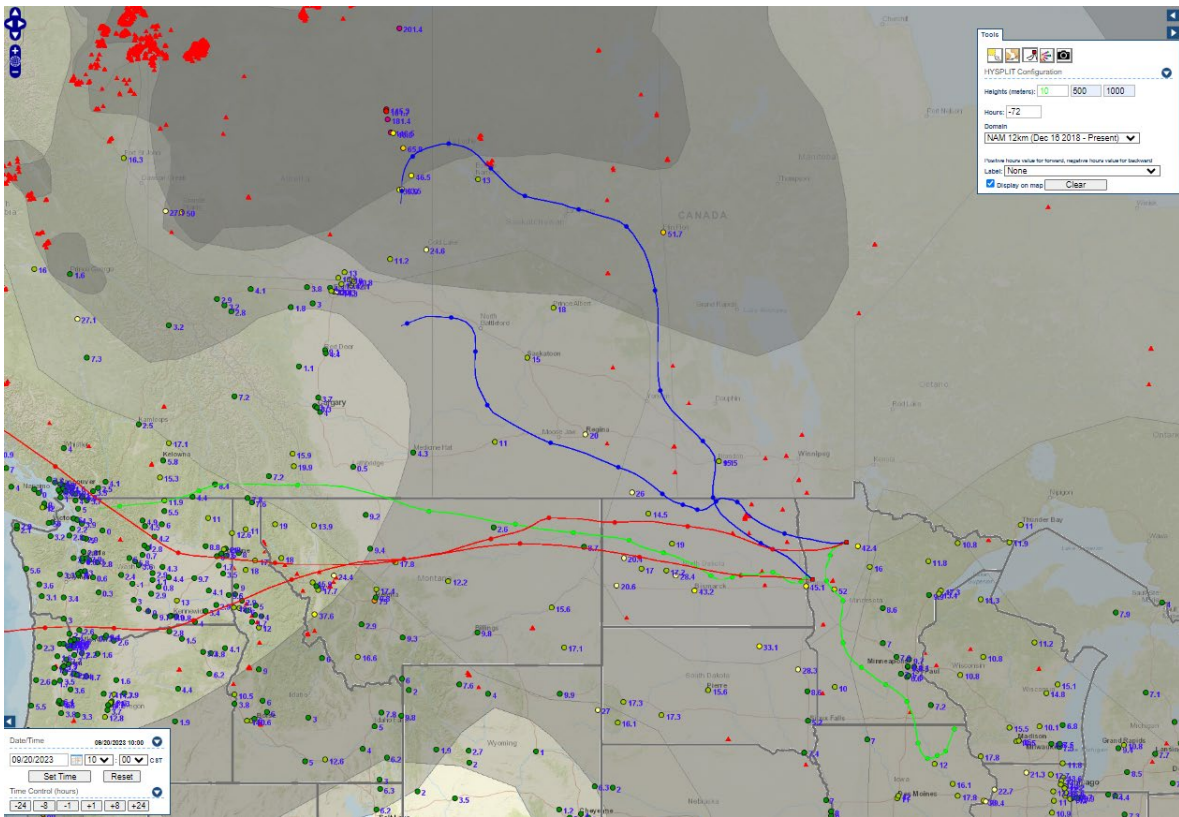
Site	Site AQS	Date (LST)	Daily average (µg/m3)	Max hour (µg/m3)	Notes
Detroit Lakes	270052013	9/20/2023	27.0	52	Canada Wildfire Smoke
Fargo NW	380171004	9/20/2023	36.6	51.9	Canada Wildfire Smoke
Red Lake Nation	270072304	9/20/2023	25.1	45.8	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 20, 2023.



MODIS visible satellite for September 20, 2023.



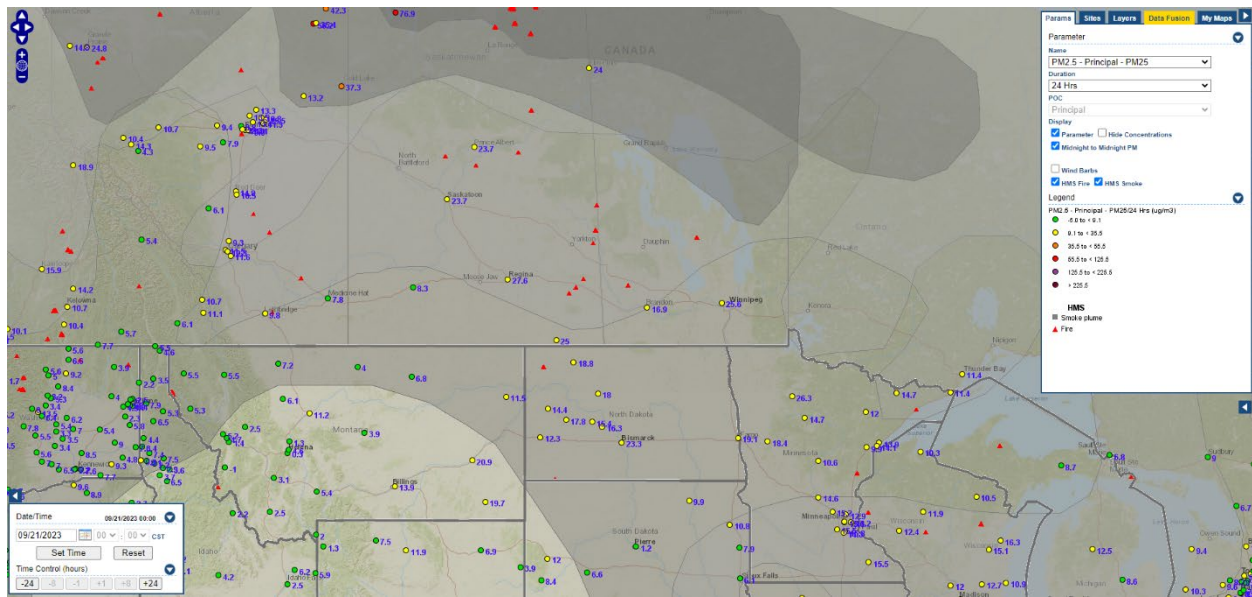
Backward trajectories for September 20, 2023.

9/21/2023 Impacts

Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 21, 2023.

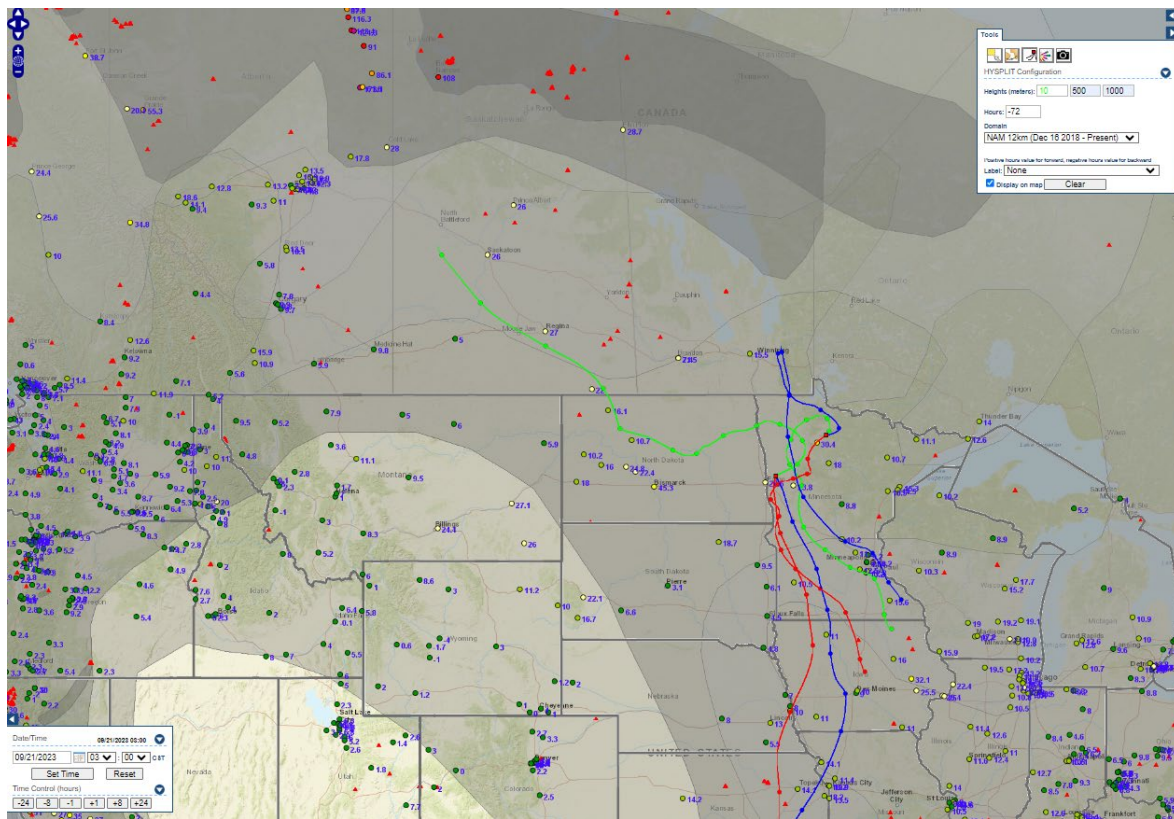
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Detroit Lakes	270052013	9/21/2023	18.4	23.8	Canada Wildfire Smoke
Fargo NW	380171004	9/21/2023	19.2	35.4	Canada Wildfire Smoke
Red Lake Nation	270072304	9/21/2023	26.4	36.2	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 21, 2023.



MODIS visible satellite for September 21, 2023.



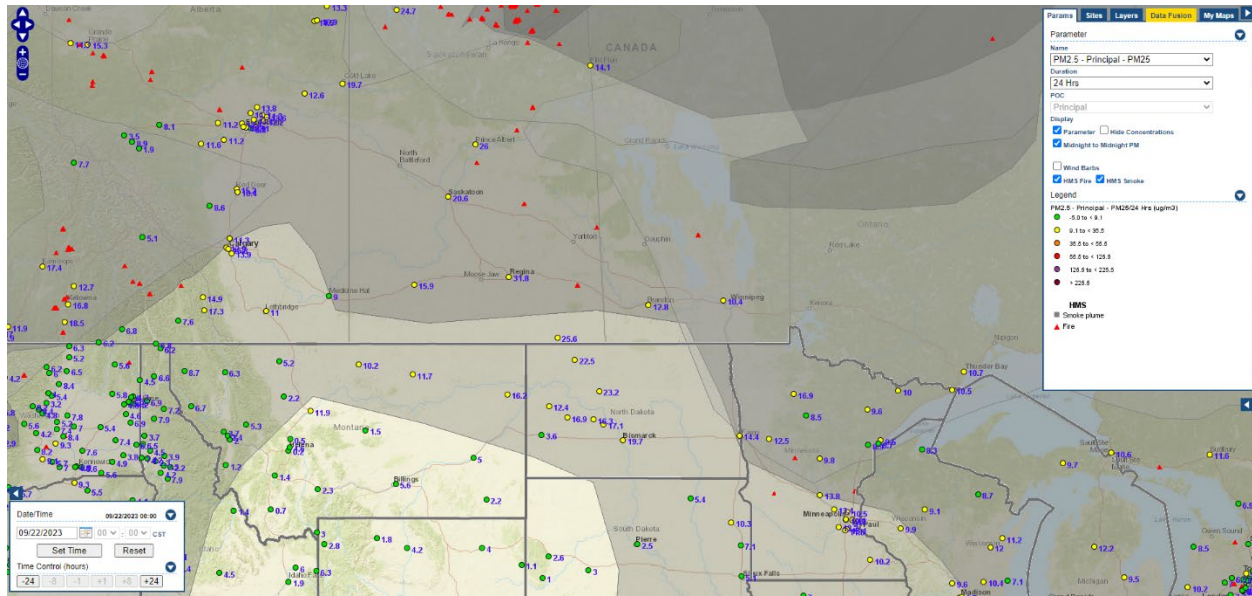
Backward trajectories for September 21, 2023.

9/22/2023 Impacts

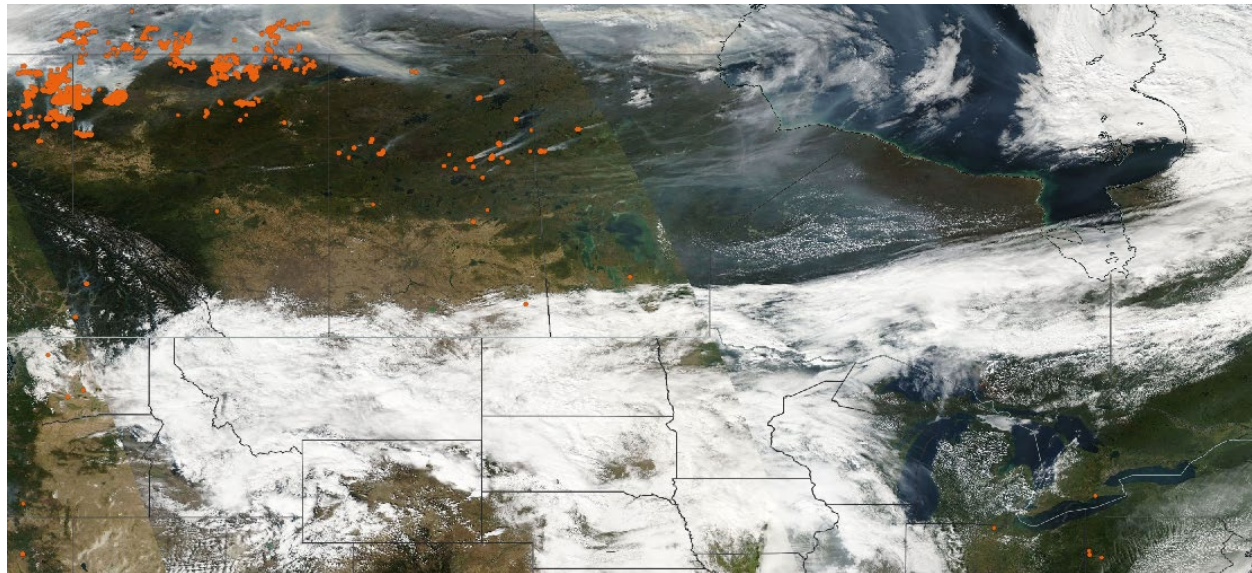
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 22, 2023.

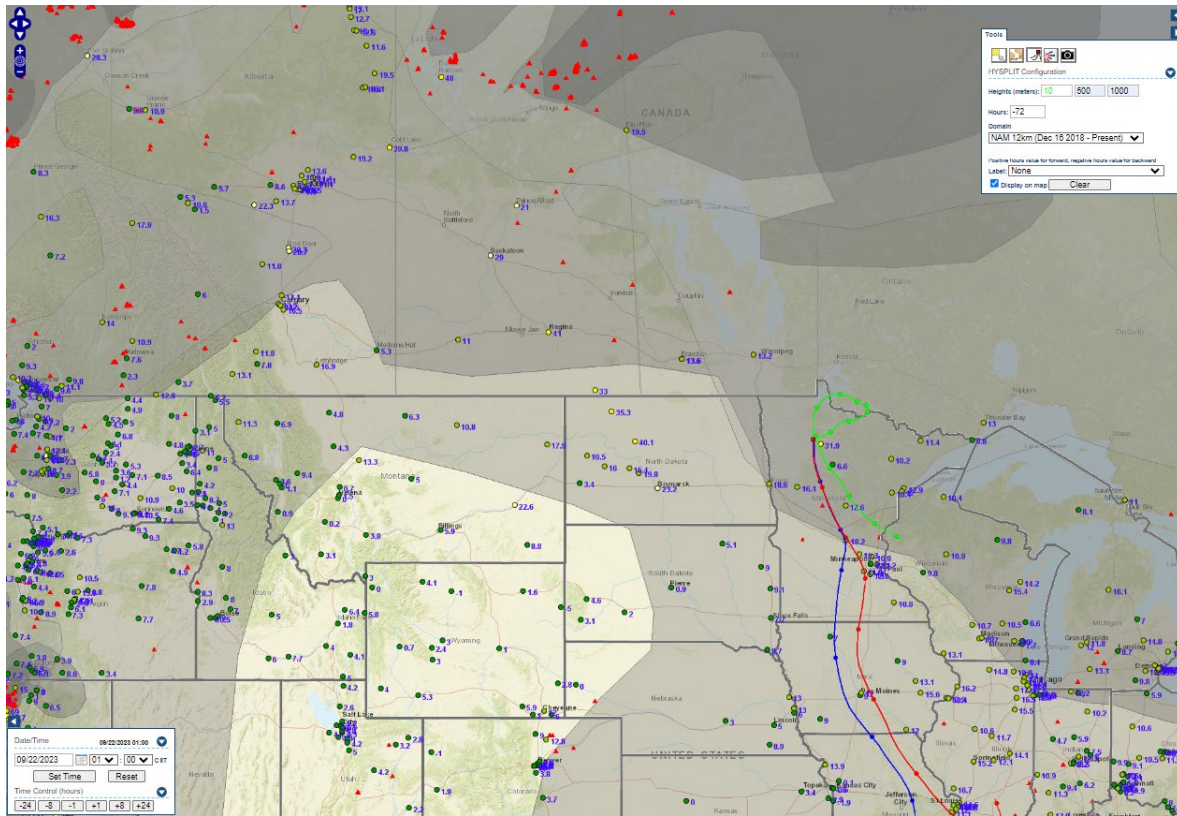
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Red Lake Nation	270072304	9/22/2023	17.0	33.2	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 22, 2023.



MODIS visible satellite for September 22, 2023.



Backward trajectories for September 22, 2023.

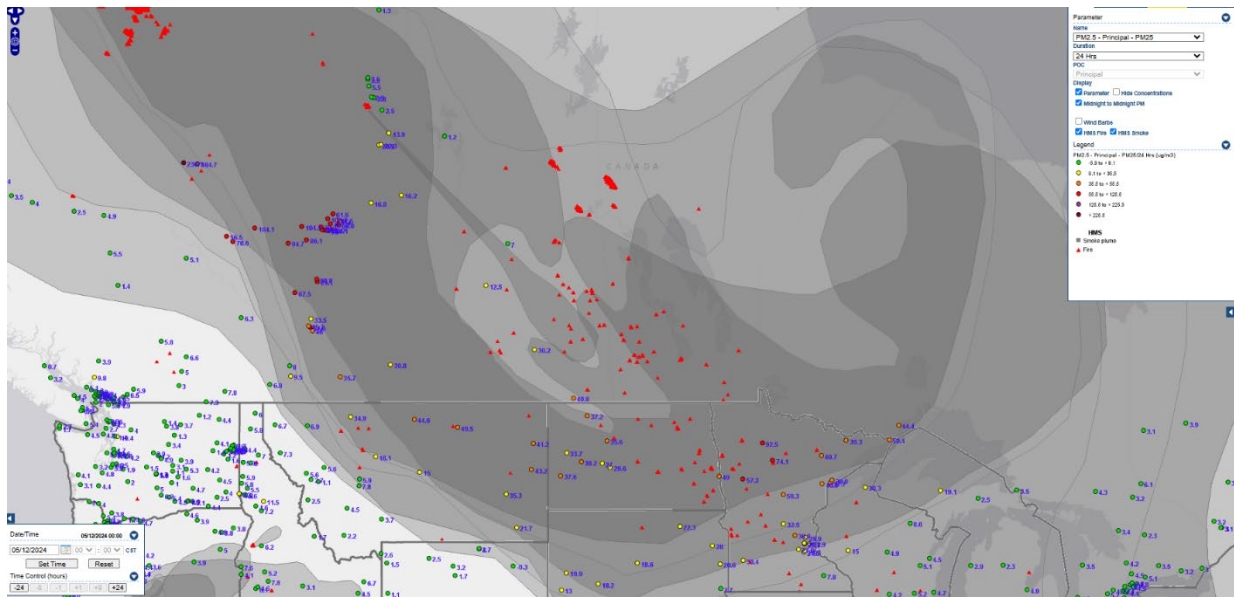
Appendix C – Daily fire impacts for 2024

5/12/2024 Impacts

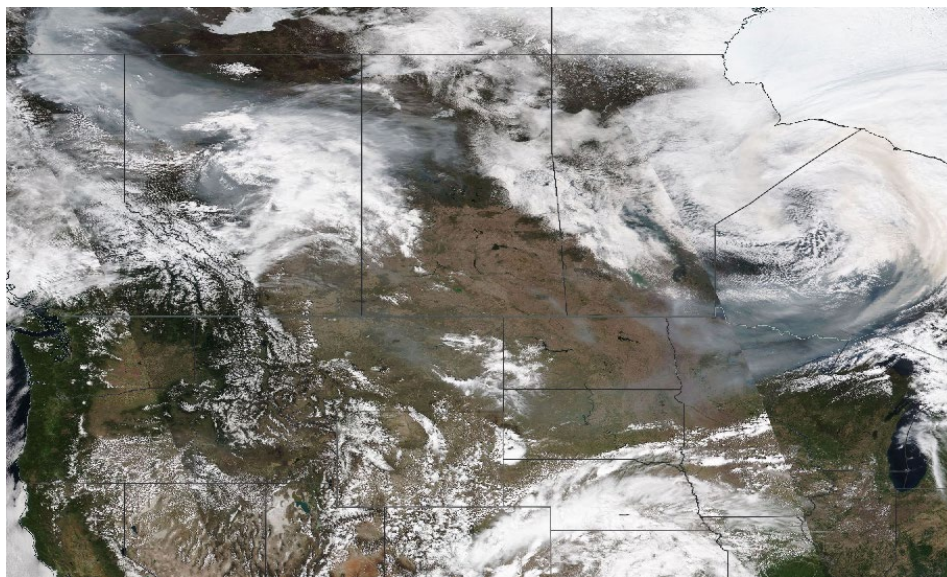
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on May 12, 2024.

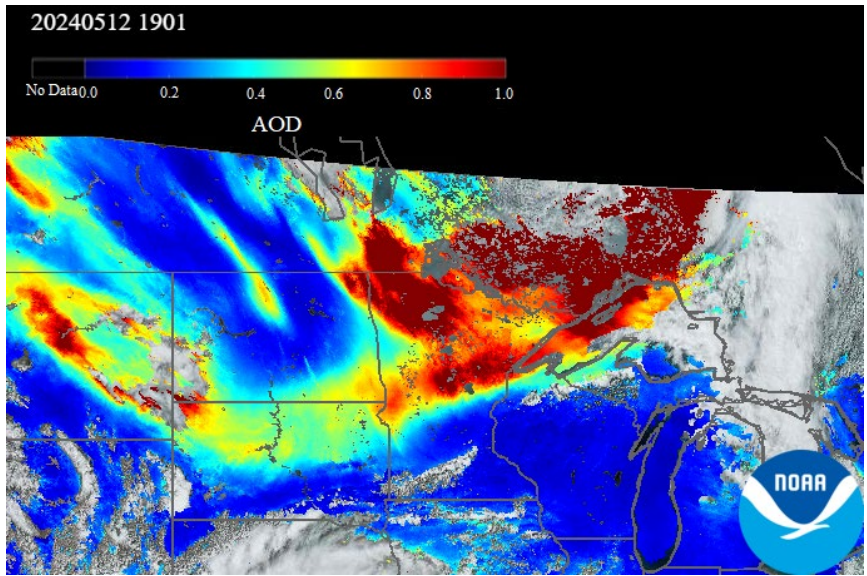
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	5/12/2024	24.32	107.5	Canada Wildfire Smoke
Blaine	270031002	5/12/2024	28.96	105.7	Canada Wildfire Smoke
Brainerd	270353204	5/12/2024	50.38	131.6	Canada Wildfire Smoke
Detroit Lakes	270052013	5/12/2024	57.25	116.3	Canada Wildfire Smoke
Duluth-WDSE	271377550	5/12/2024	38.96	94.5	Canada Wildfire Smoke
Ely	270750005	5/12/2024	39.36	153.6	Canada Wildfire Smoke
Fargo NW	380171004	5/12/2024	49	105	Canada Wildfire Smoke
Fond du Lac	270177417	5/12/2024	40.83	99	Canada Wildfire Smoke
Grand Portage	270317810	5/12/2024	50.5	144.8	Canada Wildfire Smoke
Lakeville - Near Road	270370480	5/12/2024	21.56	97.4	Canada Wildfire Smoke
Leech Lake Nation	270213410	5/12/2024	74.19	176.3	Canada Wildfire Smoke
Marshall	270834210	5/12/2024	33.42	94.5	Canada Wildfire Smoke
Minneapolis - Anderson	270530963	5/12/2024	25.74	100.3	Canada Wildfire Smoke
Minneapolis - East Phillips	270531904	5/12/2024	26.46	102.9	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	5/12/2024	25.03	96.1	Canada Wildfire Smoke
Red Lake Nation	270072304	5/12/2024	92.56	182.7	Canada Wildfire Smoke
Shakopee	271390505	5/12/2024	27.88	124.6	Canada Wildfire Smoke
St. Cloud	271453052	5/12/2024	32.52	95.3	Canada Wildfire Smoke
St. Michael	271713201	5/12/2024	36.88	145.7	Canada Wildfire Smoke
St. Paul-Harding	271230871	5/12/2024	27.98	106.8	Canada Wildfire Smoke
Virginia	271377001	5/12/2024	40.74	116	Canada Wildfire Smoke
West Duluth	271377554	5/12/2024	37.76	101.2	Canada Wildfire Smoke



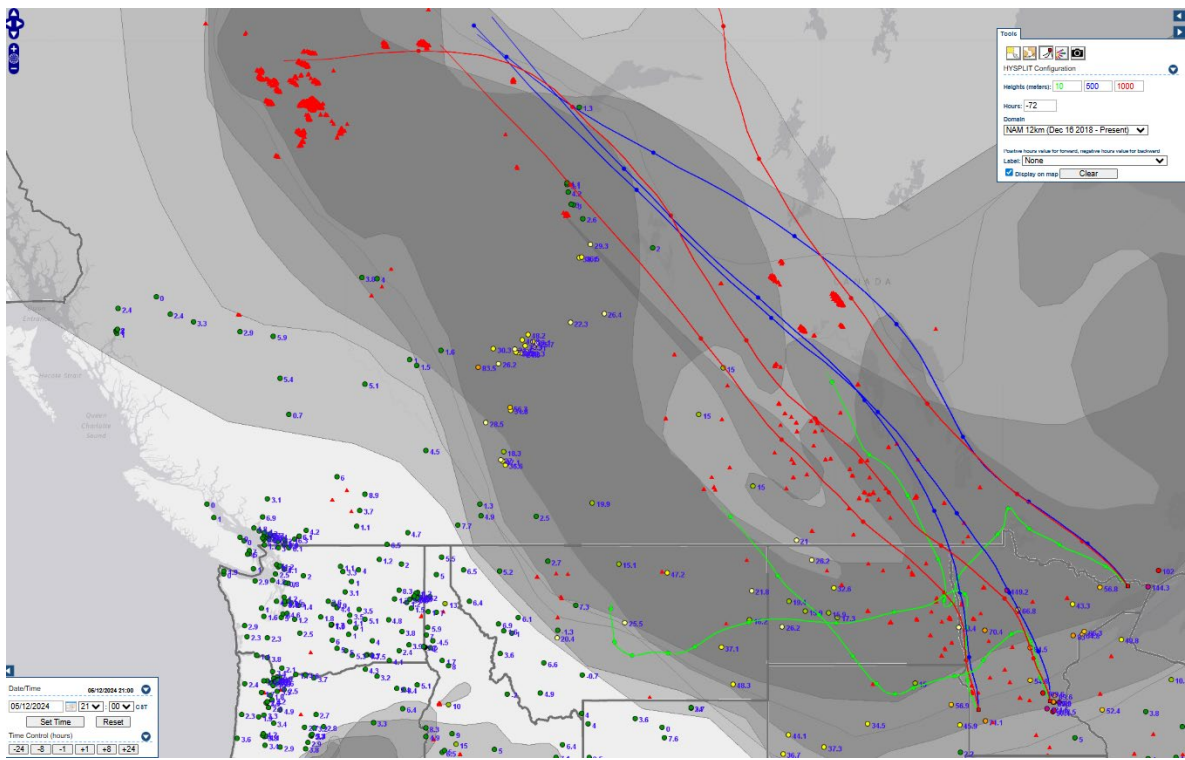
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on May 12, 2024.



MODIS visible satellite for May 12, 2024.



Aerosol Optical Depth from GOES EAST for May 12, 2024. Source: Aerosol Watch.



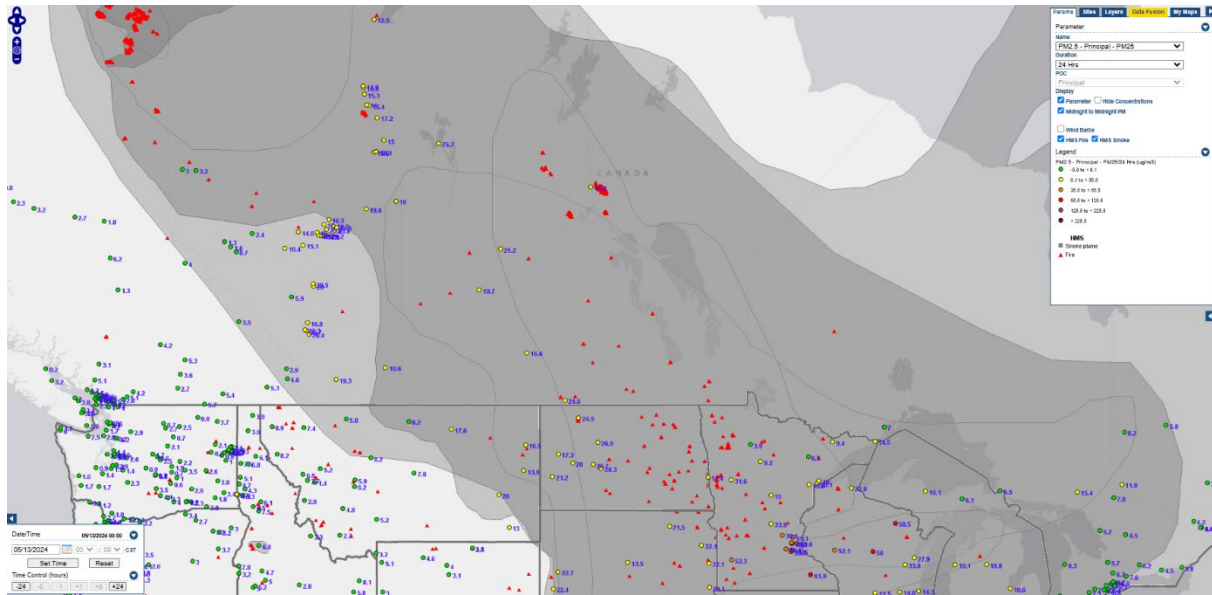
Backward trajectories for May 12, 2024.

5/13/2024 Impacts

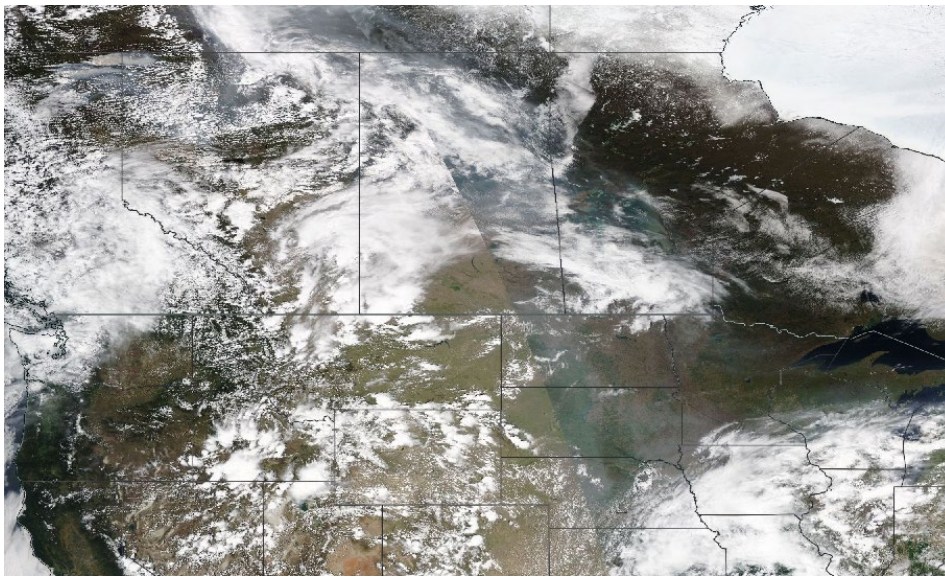
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on May 13, 2024.

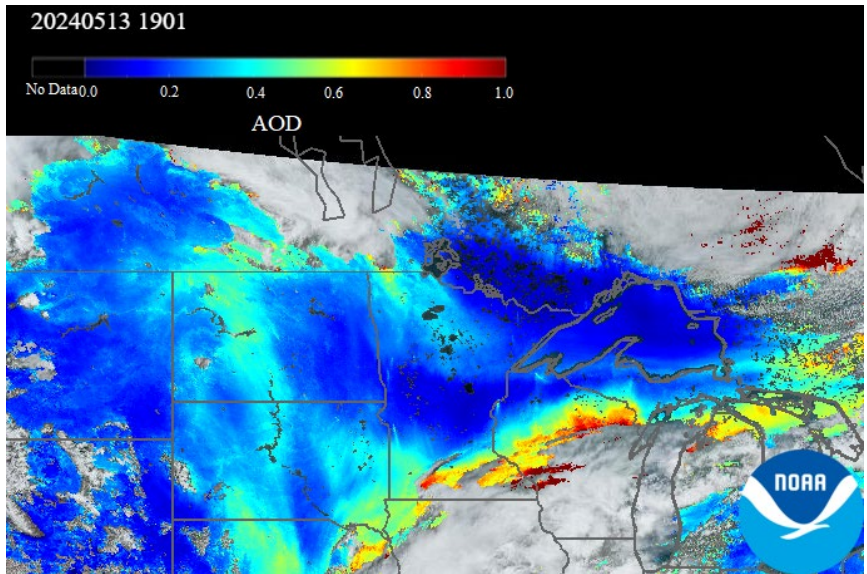
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	5/13/2024	56.51	115.6	Canada Wildfire Smoke
Blaine	270031002	5/13/2024	45.14	113.9	Canada Wildfire Smoke
Brainerd	270353204	5/13/2024	15.02	67.5	Canada Wildfire Smoke
Detroit Lakes	270052013	5/13/2024	31.69	132.2	Canada Wildfire Smoke
Duluth-WDSE	271377550	5/13/2024	18.03	49.7	Canada Wildfire Smoke
Ely	270750005	5/13/2024	9.49	63.8	Canada Wildfire Smoke
Fargo NW	380171004	5/13/2024	13.4	41.2	Canada Wildfire Smoke
Fond du Lac	270177417	5/13/2024	15.65	48.5	Canada Wildfire Smoke
Grand Portage	270317810	5/13/2024	14.54	105.2	Canada Wildfire Smoke
Lakeville - Near Road	270370480	5/13/2024	50.53	104.3	Canada Wildfire Smoke
Leech Lake Nation	270213410	5/13/2024	9.27	67.8	Canada Wildfire Smoke
Marshall	270834210	5/13/2024	52.35	101.1	Canada Wildfire Smoke
Minneapolis - Anderson	270530963	5/13/2024	48.51	110.9	Canada Wildfire Smoke
Minneapolis - East Phillips	270531904	5/13/2024	48.92	110.9	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	5/13/2024	45.81	103	Canada Wildfire Smoke
Rochester	271095008	5/13/2024	61.91	88.7	Canada Wildfire Smoke
Shakopee	271390505	5/13/2024	50.45	113.7	Canada Wildfire Smoke
St. Cloud	271453052	5/13/2024	33.84	100.5	Canada Wildfire Smoke
St. Michael	271713201	5/13/2024	39.16	106.9	Canada Wildfire Smoke
St. Paul-Harding	271230871	5/13/2024	46.67	102.1	Canada Wildfire Smoke
West Duluth	271377554	5/13/2024	20.12	49.9	Canada Wildfire Smoke



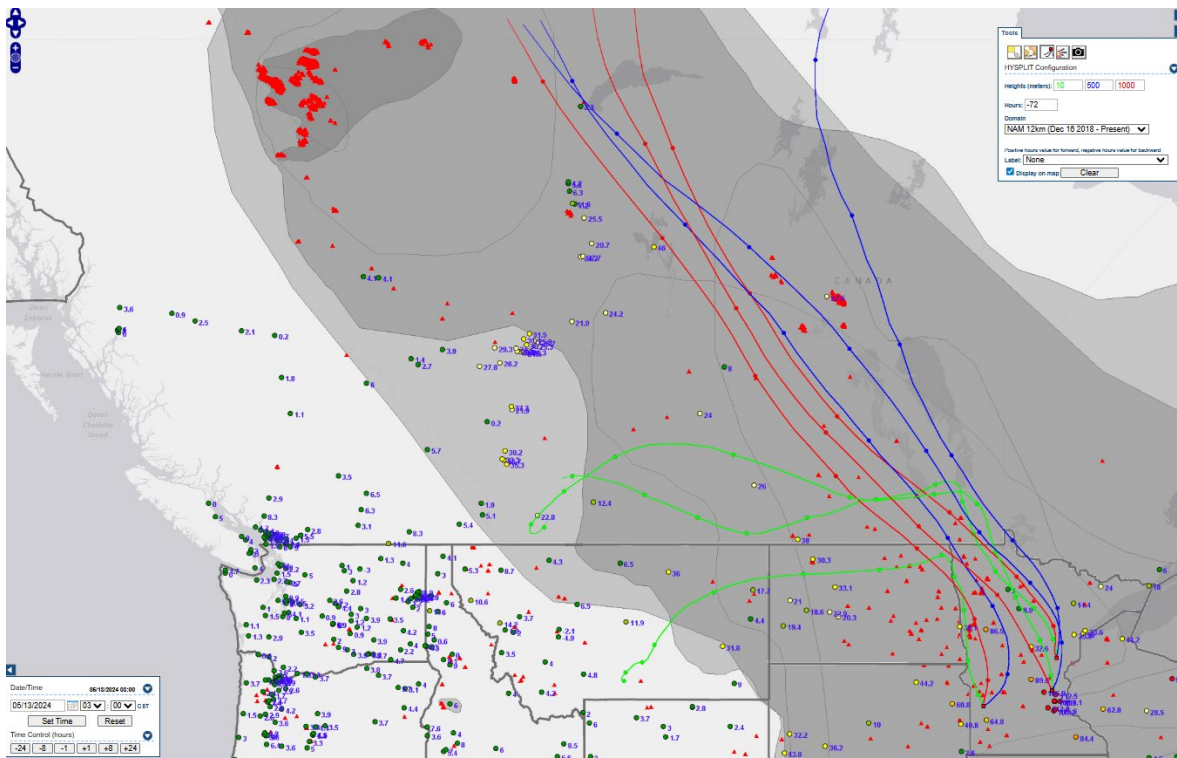
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on May 13, 2024.



MODIS visible satellite for May 13, 2024.



Aerosol Optical Depth from GOES EAST for May 13, 2024. Source: Aerosol Watch.



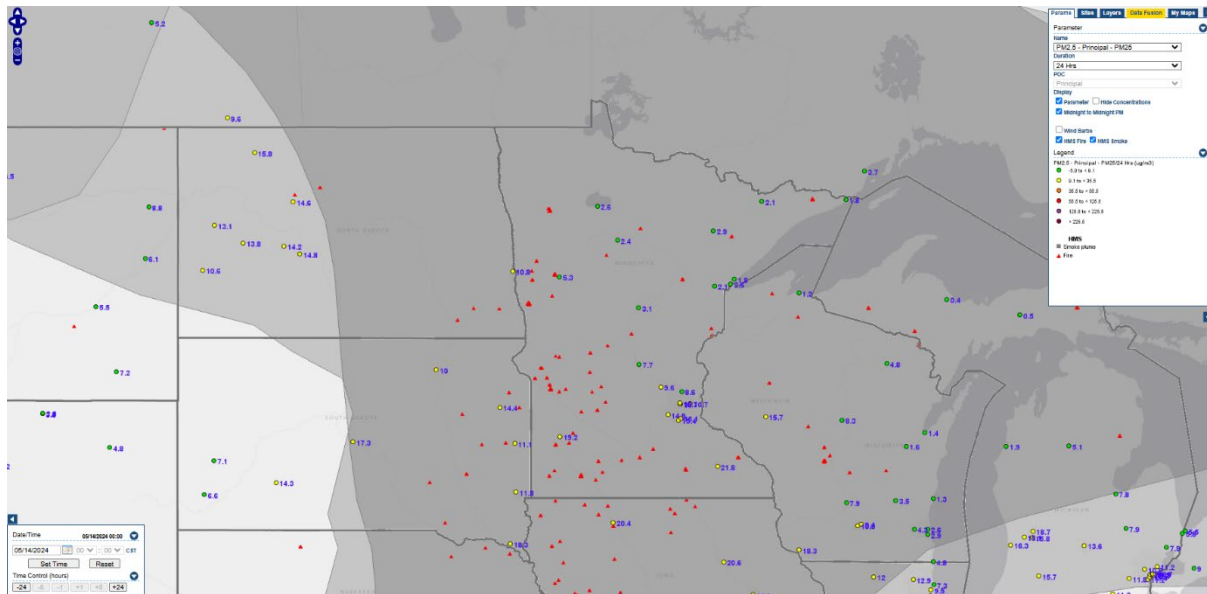
Backward trajectories for May 13, 2024.

5/14/2024 Impacts

Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on May 14, 2024.

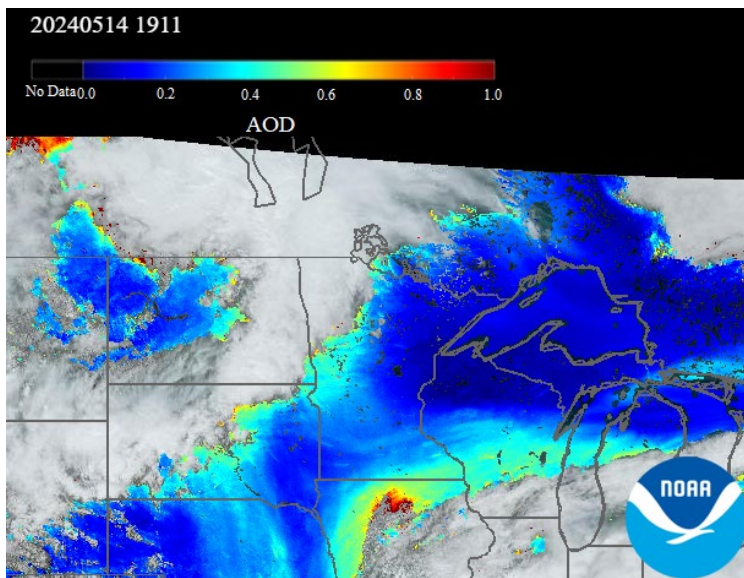
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	5/14/2024	16.18	25	Canada Wildfire Smoke
Lakeville - Near Road	270370480	5/14/2024	15.4	25	Canada Wildfire Smoke
Marshall	270834210	5/14/2024	19.24	31.7	Canada Wildfire Smoke
Rochester	271095008	5/14/2024	21.86	36.4	Canada Wildfire Smoke
Shakopee	271390505	5/14/2024	14.93	23.2	Canada Wildfire Smoke



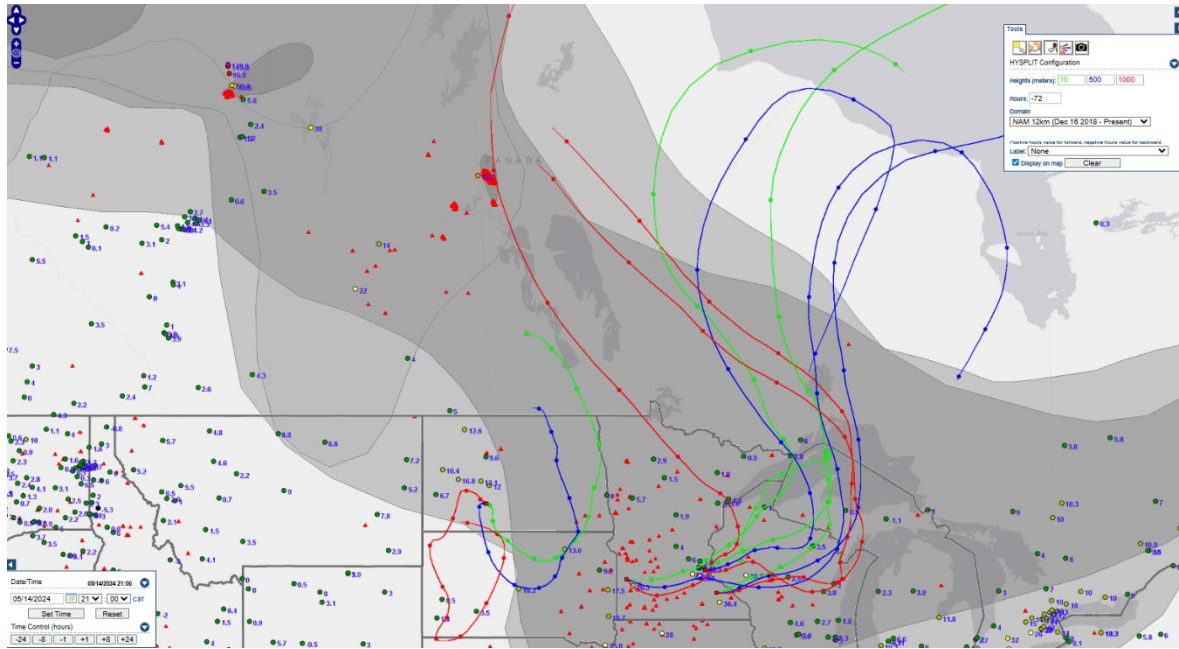
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on May 14, 2024.



MODIS visible satellite for May 14, 2024.



Aerosol Optical Depth from GOES EAST for May 14, 2024. Source: Aerosol Watch.



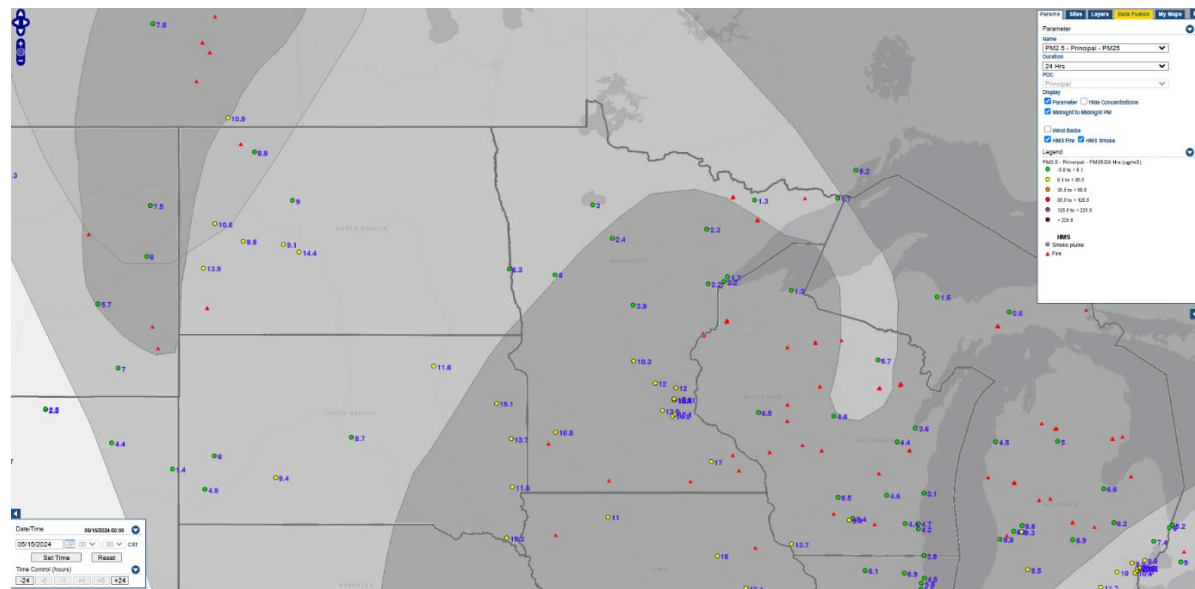
Backward trajectories for May 14, 2024.

5/15/2024 Impacts

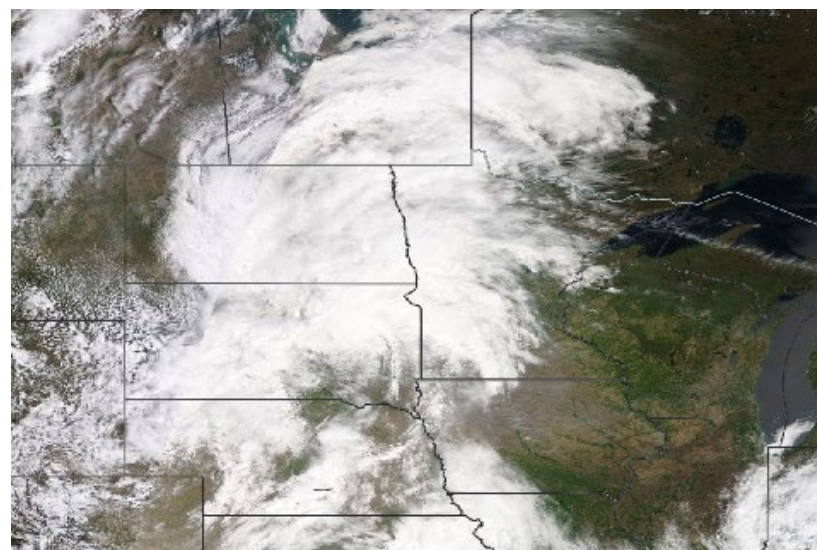
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on May 15, 2024.

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	5/15/2024	15.14	30.5	Canada Wildfire Smoke
Marshall	270834210	5/15/2024	16.8	27.7	Canada Wildfire Smoke
Rochester	271095008	5/15/2024	17	30.7	Canada Wildfire Smoke



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on May 15, 2024.



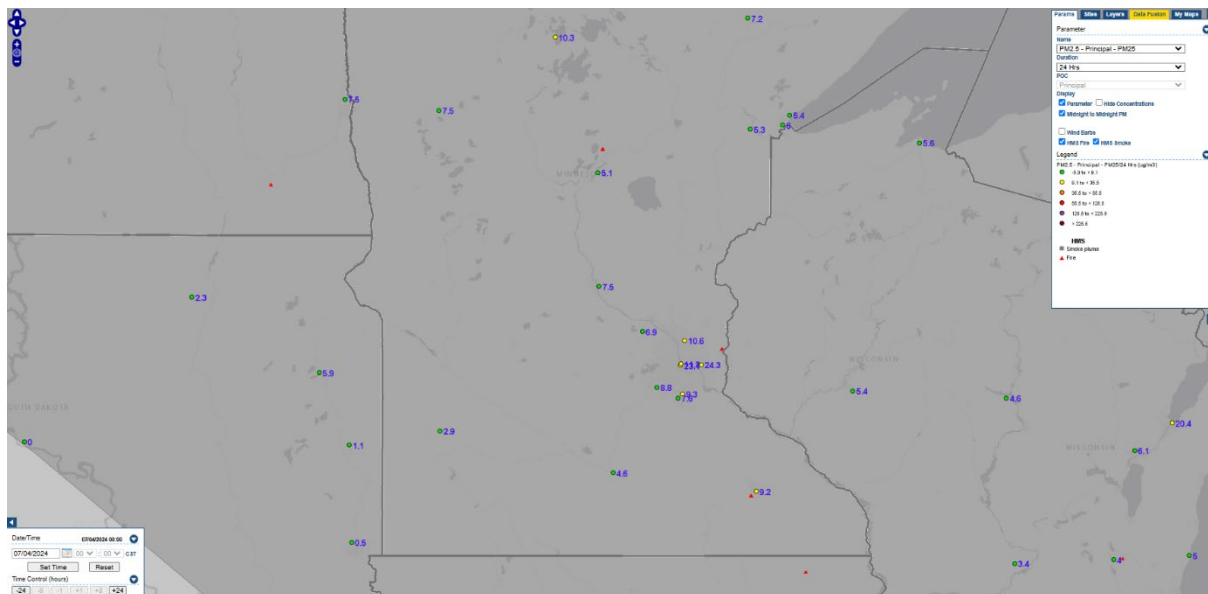
MODIS visible satellite for May 15, 2024.

7/4/2024 Impacts

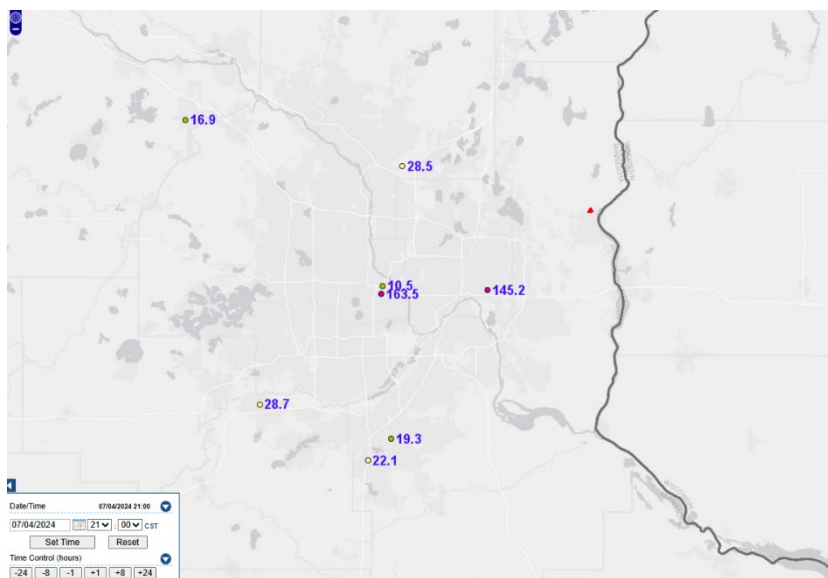
Impacts from July 4 fireworks.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on **July 4, 2024**.

Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Minneapolis - Anderson	270530963	7/4/2024	23.1	163.5	Fireworks
St. Paul-Harding	271230871	7/4/2024	24.38	145.2	Fireworks



Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 4, 2024.



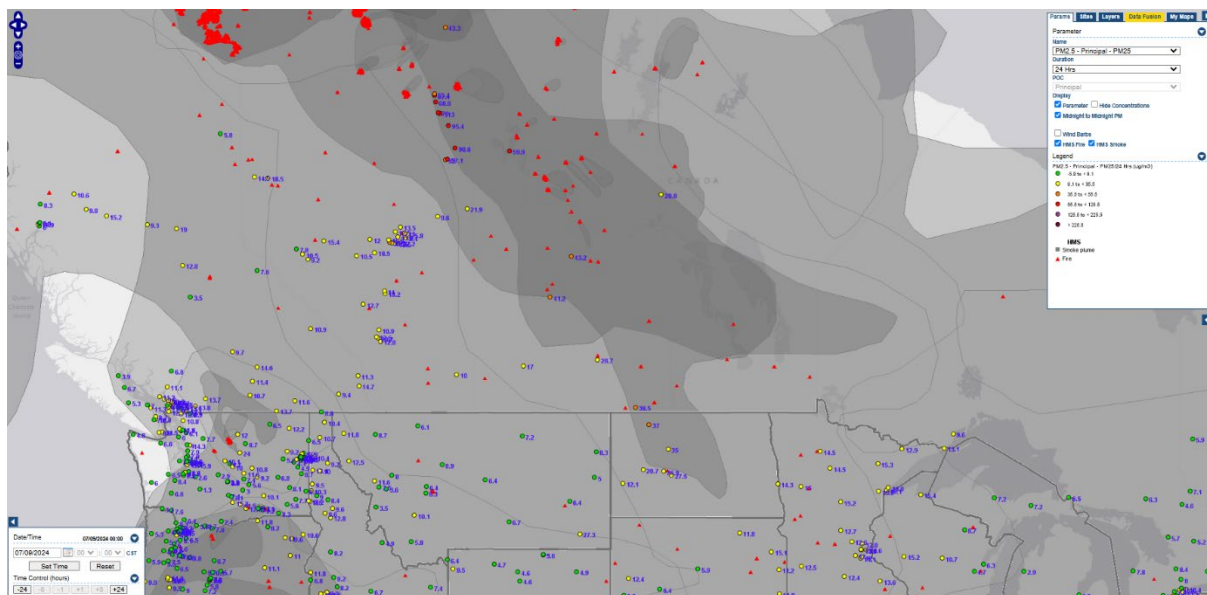
Hourly PM_{2.5} at 10pm local time on July 4, 2024.

7/9/2024 Impacts

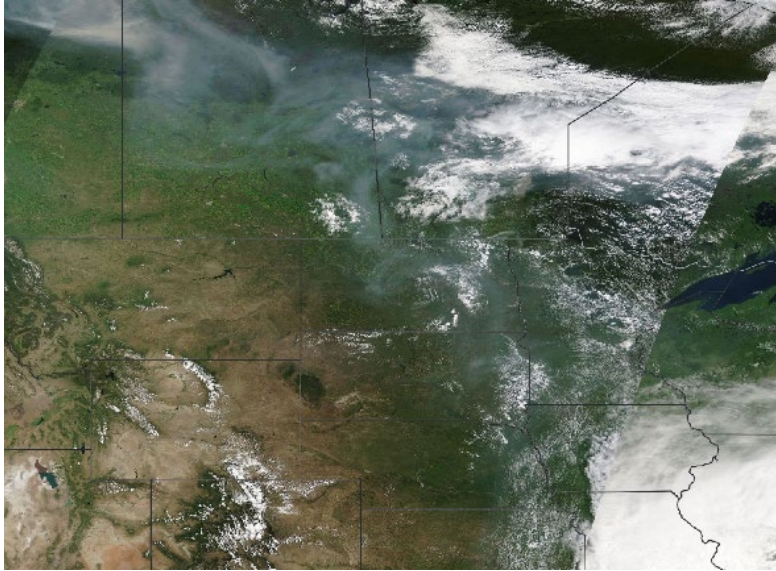
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 9, 2024.

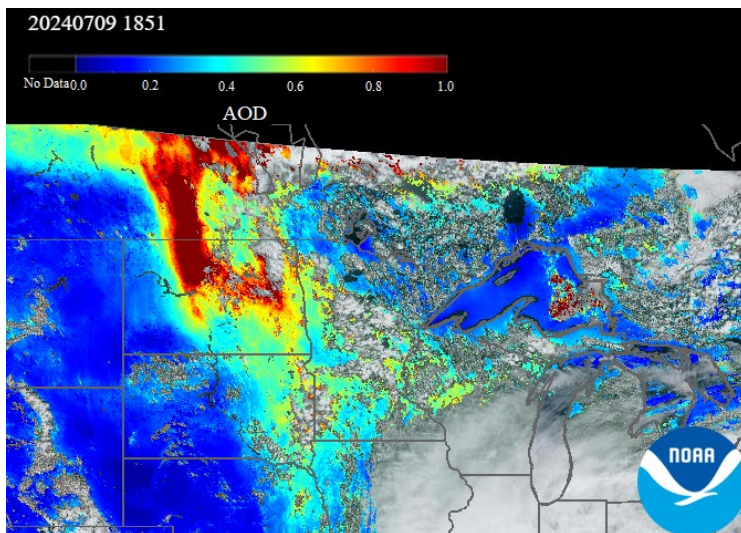
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Duluth-WDSE	271377550	7/9/2024	18.87	26	Canada Wildfire Smoke
Fond du Lac	270177417	7/9/2024	15.9	22.4	Canada Wildfire Smoke
Virginia	271377001	7/9/2024	15.35	26.6	Canada Wildfire Smoke
West Duluth	271377554	7/9/2024	19.1	25.2	Canada Wildfire Smoke



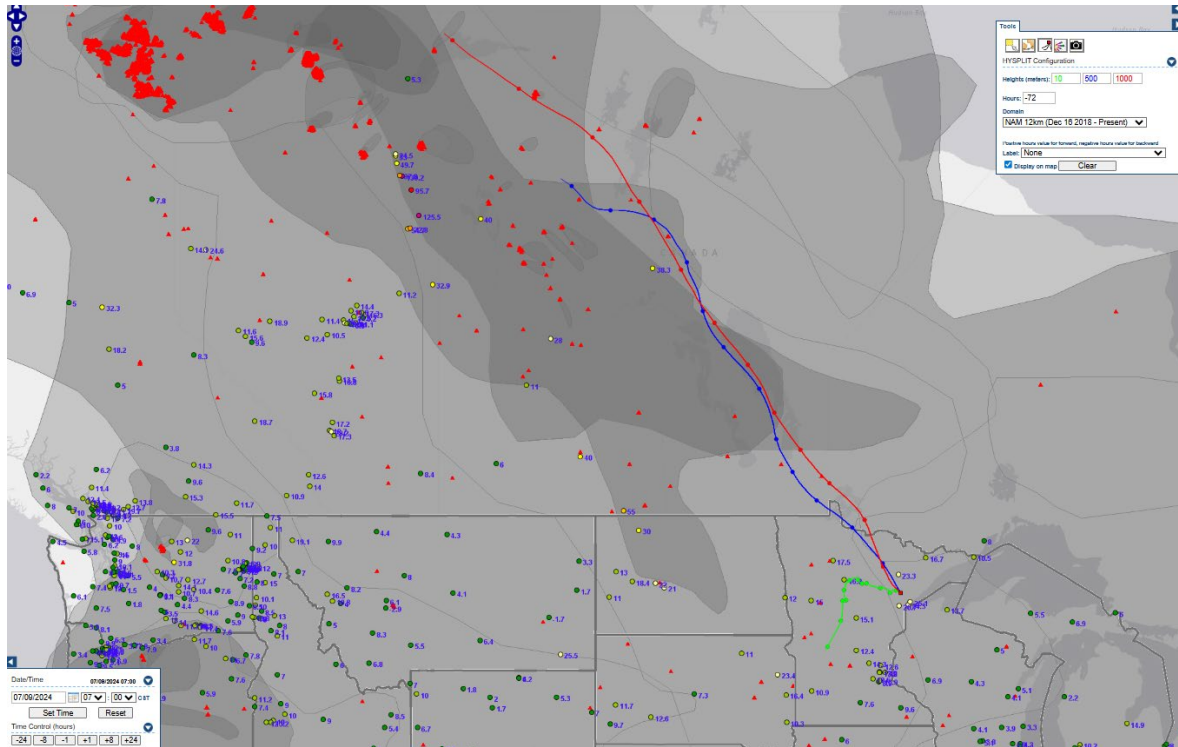
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 9, 2024.



MODIS visible satellite for July 9, 2024.



Aerosol Optical Depth from GOES EAST for July 9, 2024. Source: Aerosol Watch.



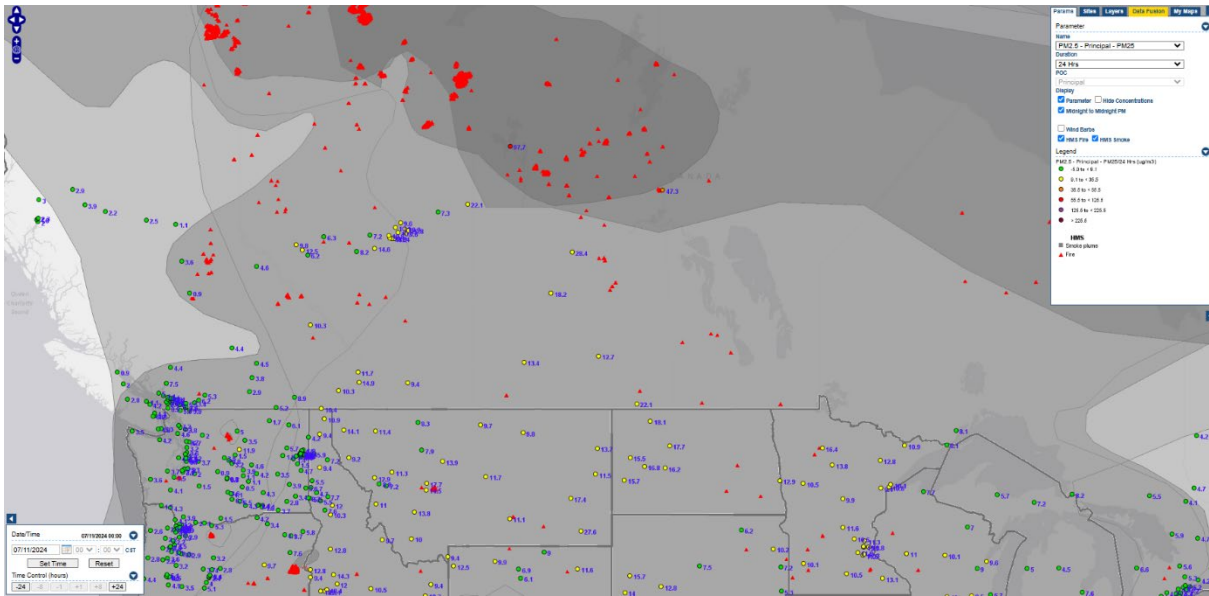
Backward trajectories for July 9, 2024.

7/11/2024 Impacts

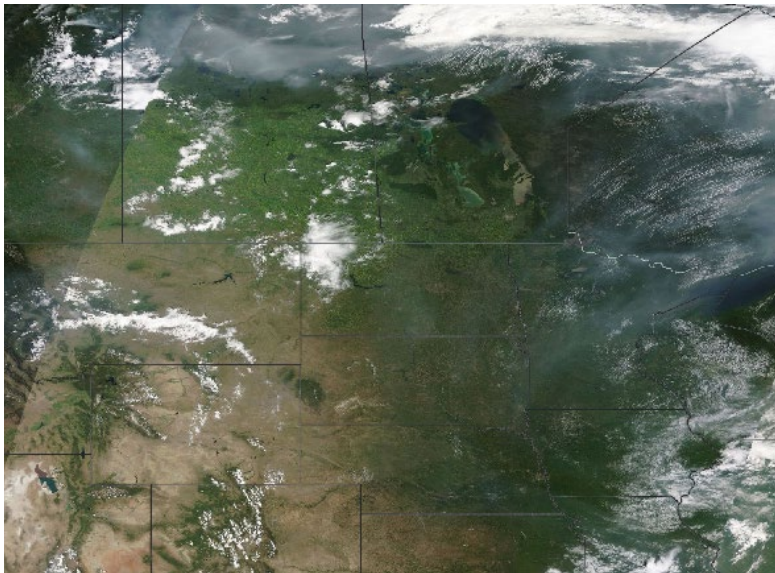
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 11, 2024.

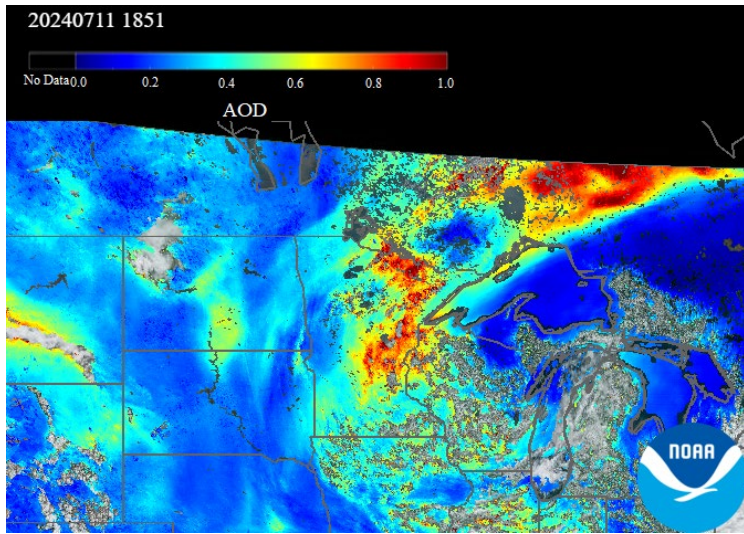
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Red Lake Nation	270072304	7/11/2024	16.45	22.8	Canada Wildfire Smoke



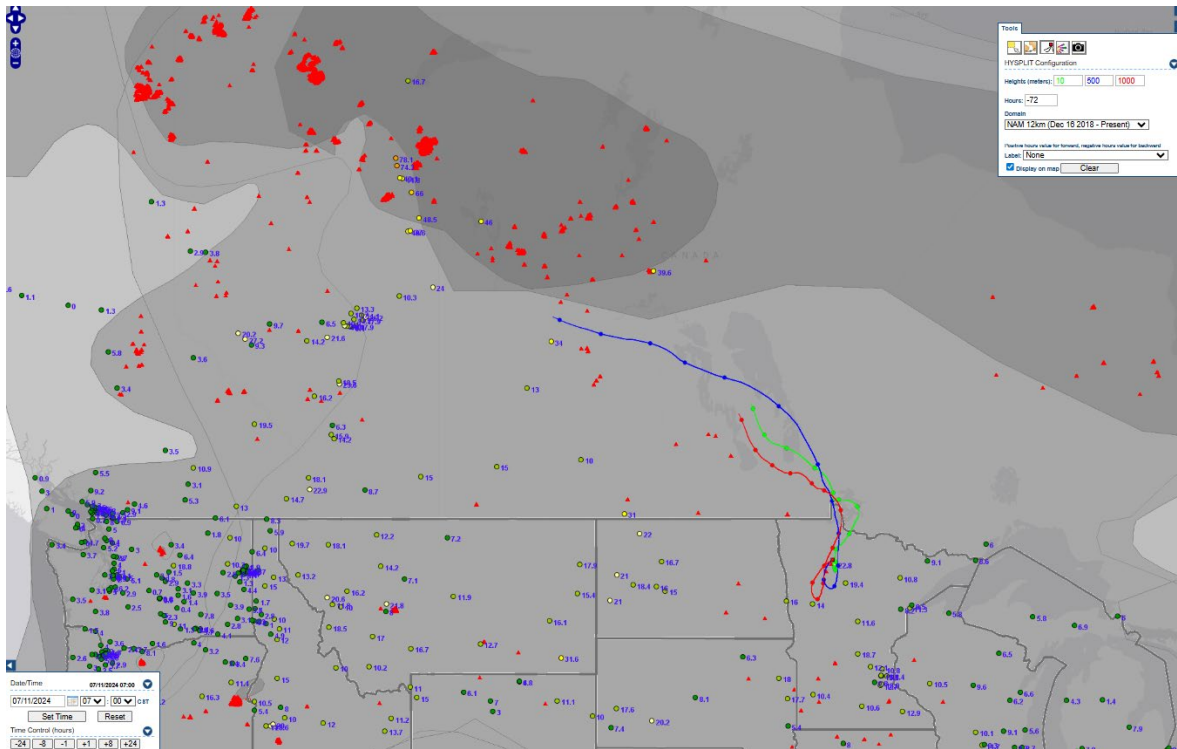
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 11, 2024.



MODIS visible satellite for July 11, 2024.



Aerosol Optical Depth from GOES EAST for July 11, 2024. Source: Aerosol Watch.



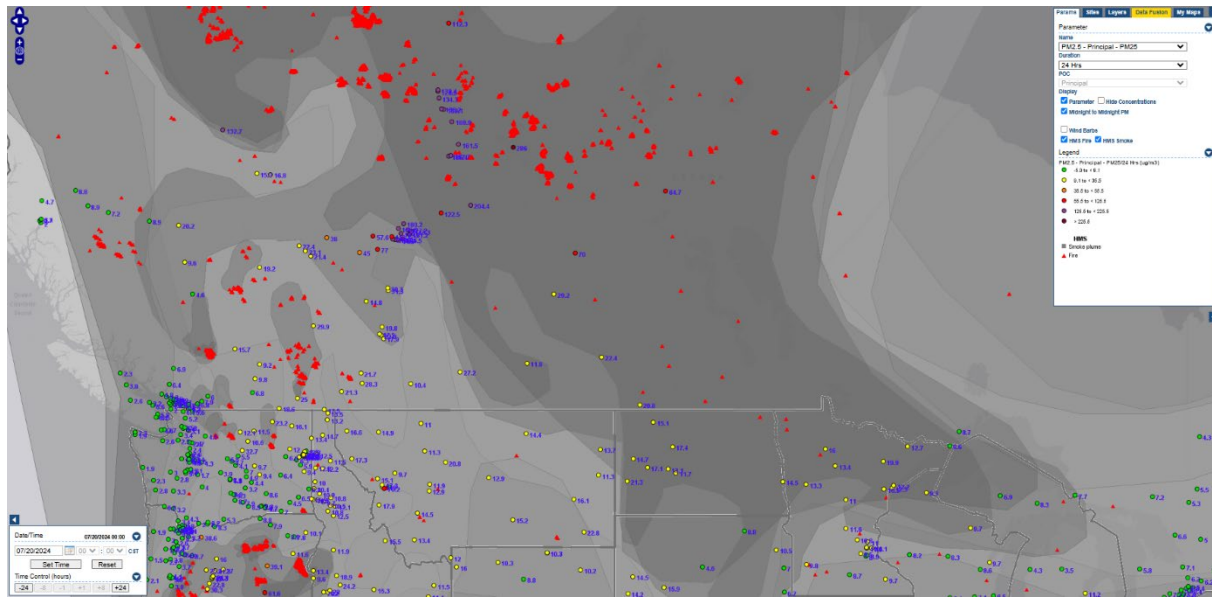
Backward trajectories for July 11, 2024.

7/20/2024 Impacts

Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 20, 2024.

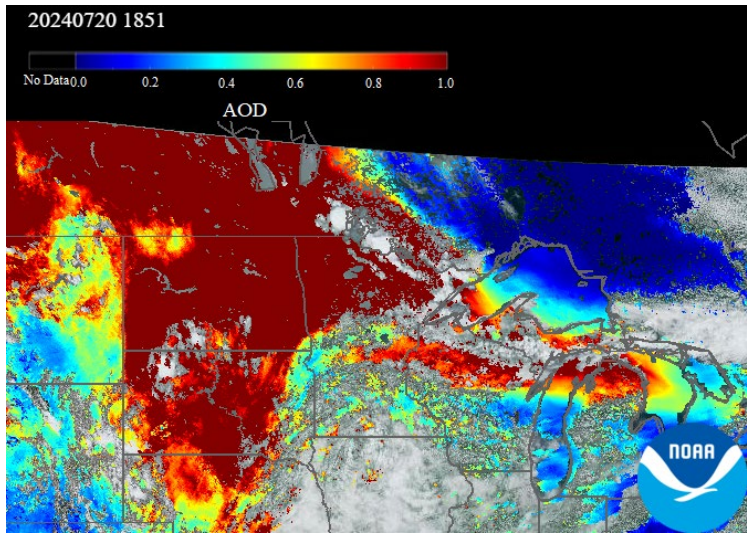
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Red Lake Nation	270072304	7/20/2024	16.07	25.5	Canada Wildfire Smoke
Virginia	271377001	7/20/2024	19.93	33.2	Canada Wildfire Smoke



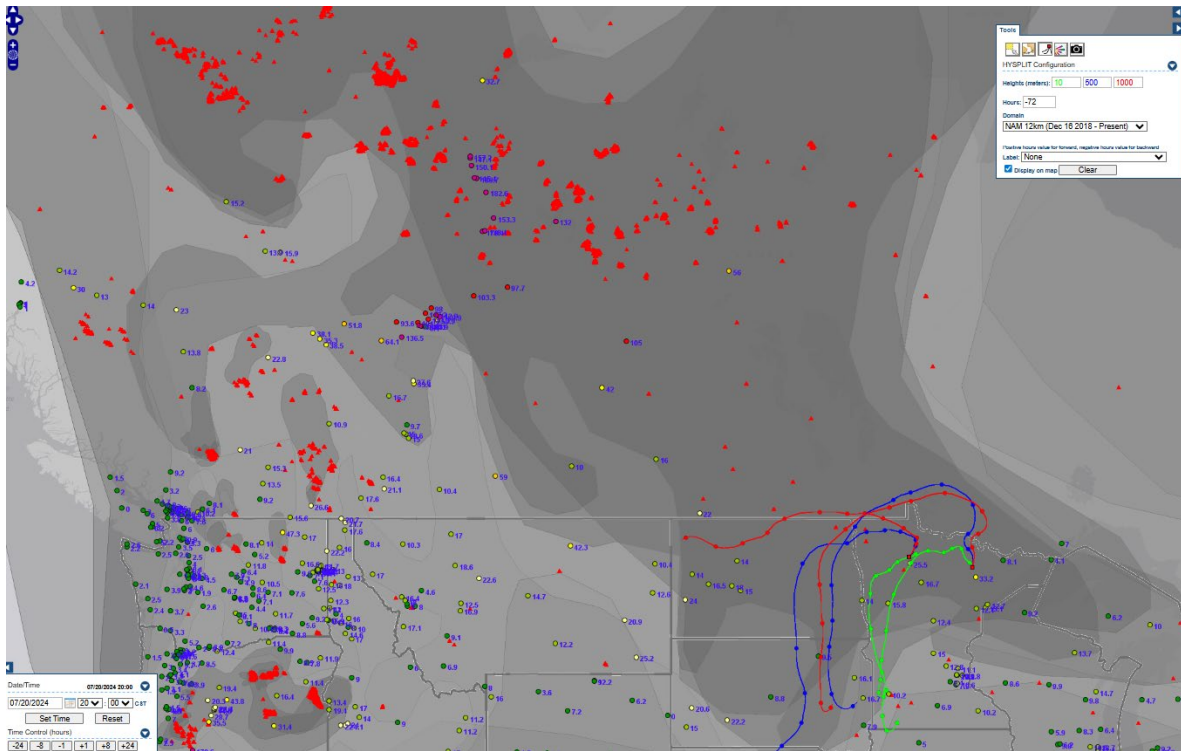
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 20, 2024.



MODIS visible satellite for July 20, 2024.



Aerosol Optical Depth from GOES EAST for July 20, 2024. Source: Aerosol Watch.



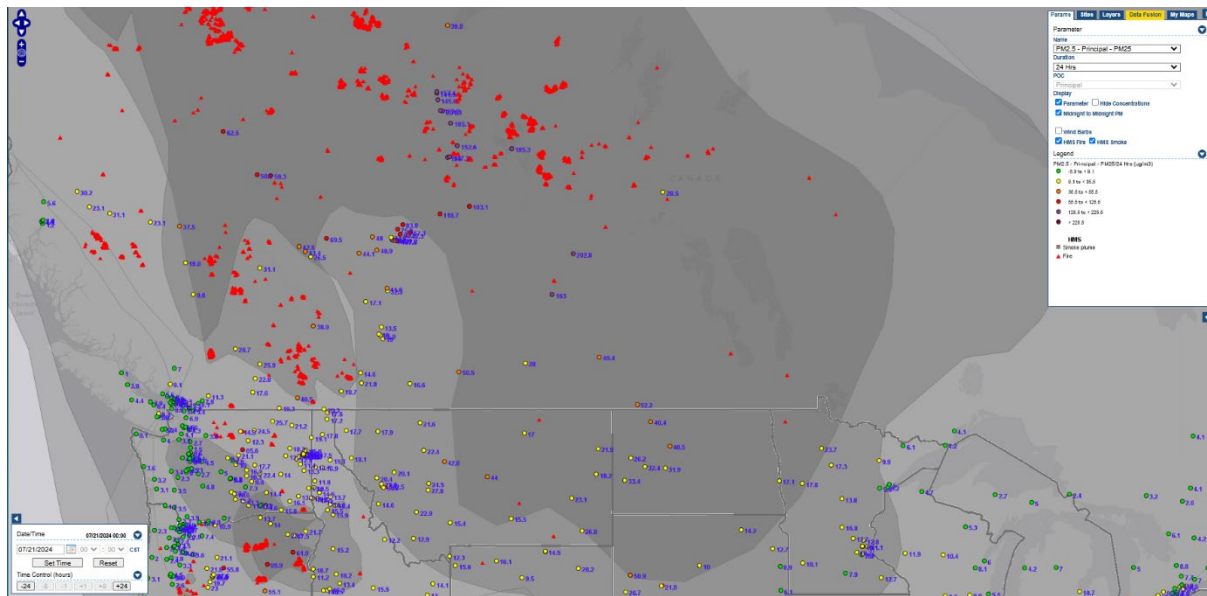
Backward trajectories for July 20, 2024.

7/21/2024 Impacts

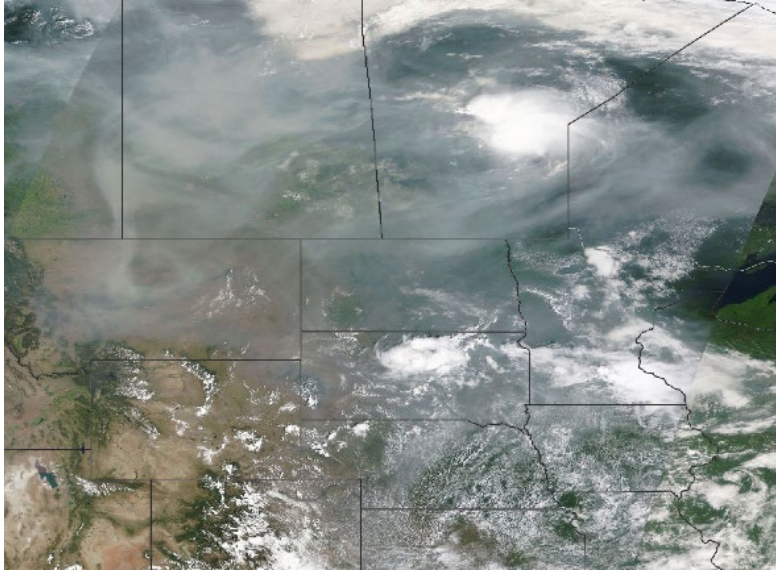
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 21, 2024.

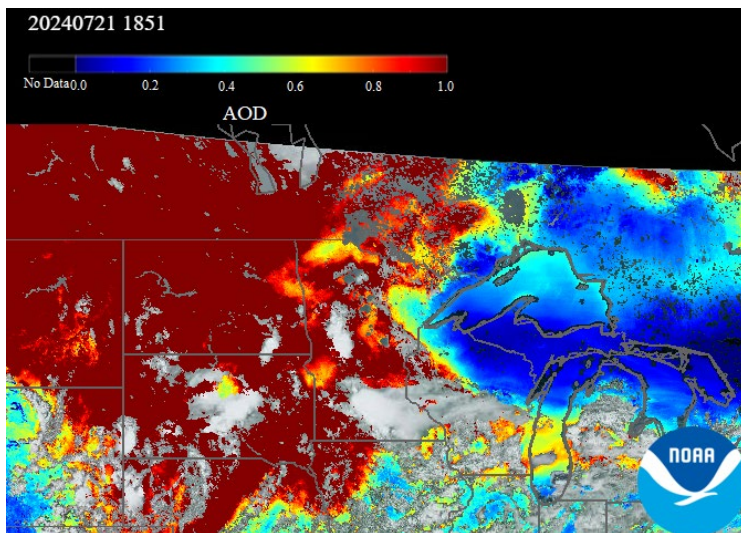
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Detroit Lakes	270052013	7/21/2024	17.85	21.3	Canada Wildfire Smoke
Fargo NW	380171004	7/21/2024	17.13	21	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/21/2024	17.32	19.1	Canada Wildfire Smoke
Red Lake Nation	270072304	7/21/2024	23.76	32.6	Canada Wildfire Smoke
St. Cloud	271453052	7/21/2024	16.82	21.4	Canada Wildfire Smoke



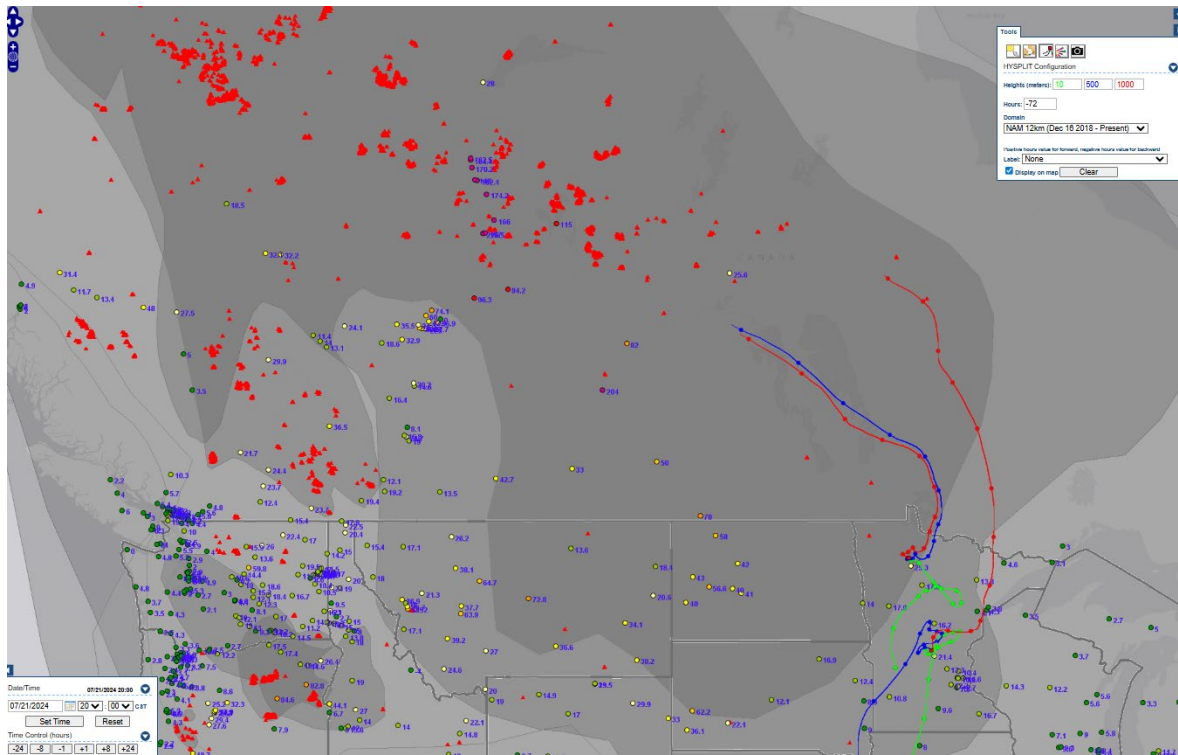
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 21, 2024.



MODIS visible satellite for July 21, 2024.



Aerosol Optical Depth from GOES EAST for July 21, 2024. Source: Aerosol Watch.



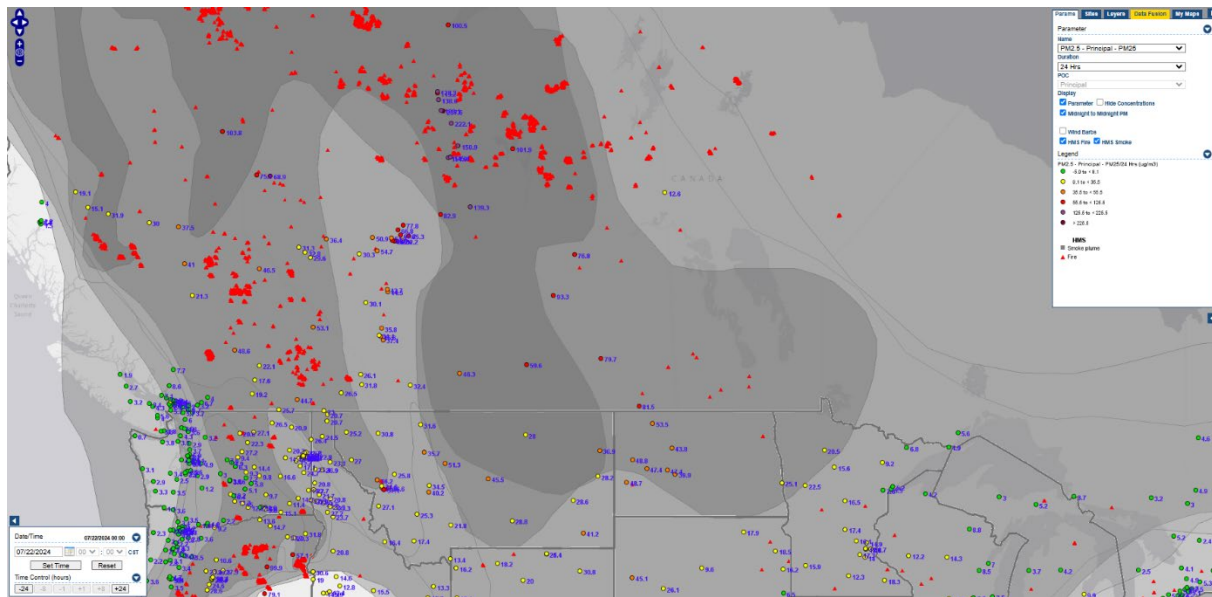
Backward trajectories for July 21, 2024.

7/22/2024 Impacts

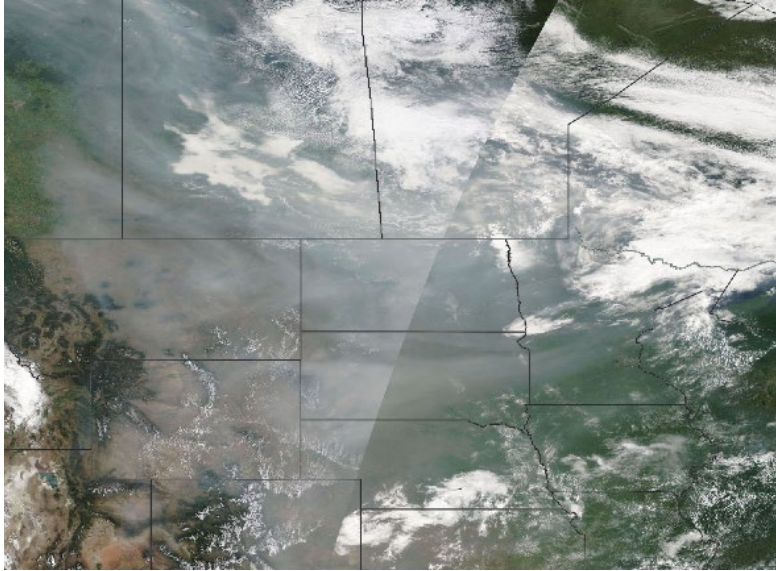
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 22, 2024.

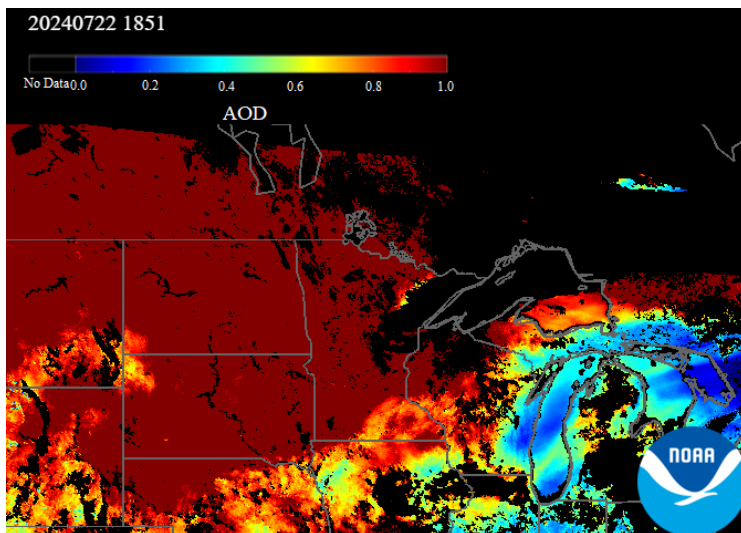
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Brainerd	270353204	7/22/2024	16.55	19.9	Canada Wildfire Smoke
Detroit Lakes	270052013	7/22/2024	22.5	29.1	Canada Wildfire Smoke
Fargo NW	380171004	7/22/2024	25.13	29	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/22/2024	15.67	22	Canada Wildfire Smoke
Marshall	270834210	7/22/2024	15.97	25.5	Canada Wildfire Smoke
Red Lake Nation	270072304	7/22/2024	20.59	28	Canada Wildfire Smoke
Rochester	271095008	7/22/2024	18.37	28.6	Canada Wildfire Smoke
Shakopee	271390505	7/22/2024	17.36	26.8	Canada Wildfire Smoke



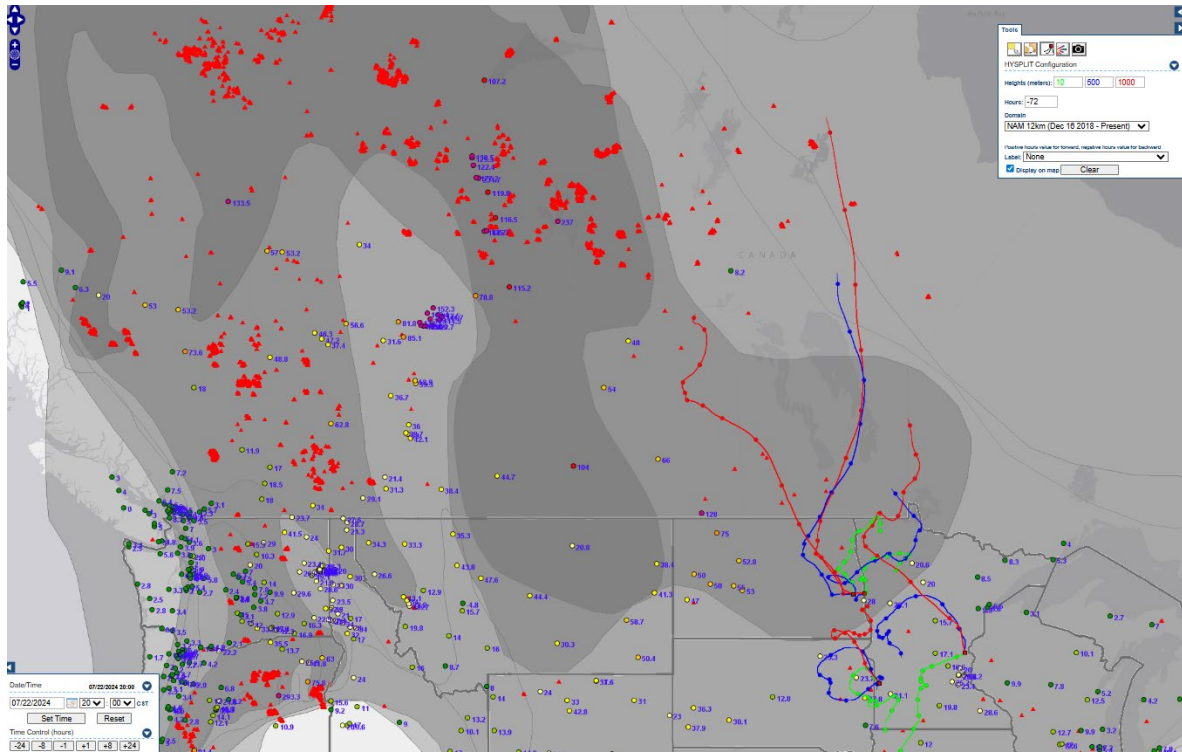
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 22, 2024.



MODIS visible satellite for July 22, 2024.



Aerosol Optical Depth from GOES EAST for July 22, 2024. Source: Aerosol Watch.



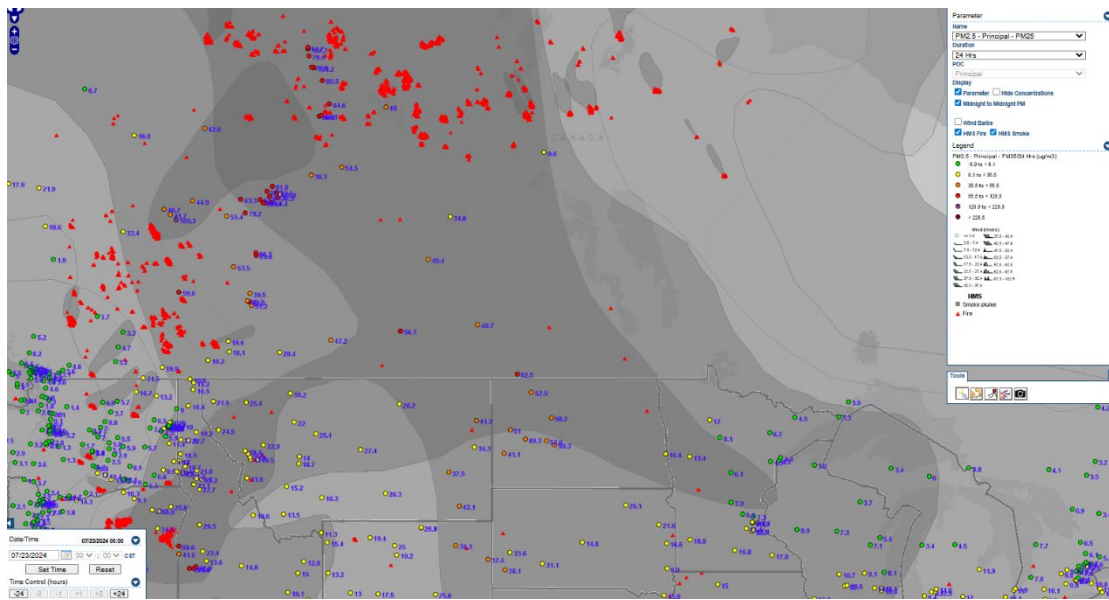
Backward trajectories for July 22, 2024.

7/23/2024 Impacts

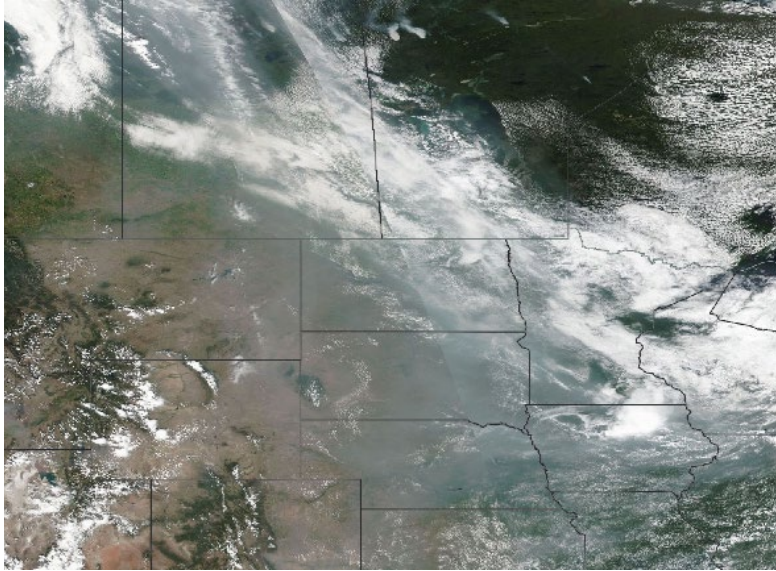
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 23, 2024.

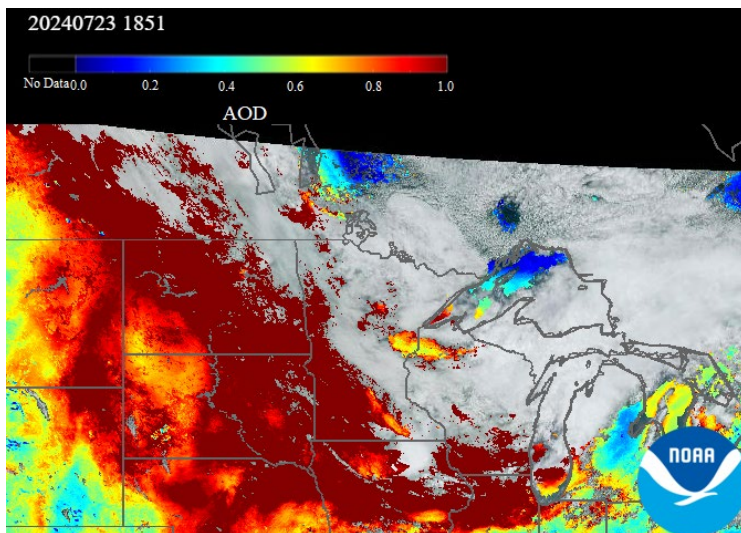
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Mankato - Rosa Parks	270135510	7/23/2024	16.81	21.7	Canada Wildfire Smoke
Marshall	270834210	7/23/2024	18.82	24.7	Canada Wildfire Smoke
Rochester	271095008	7/23/2024	17.85	28	Canada Wildfire Smoke



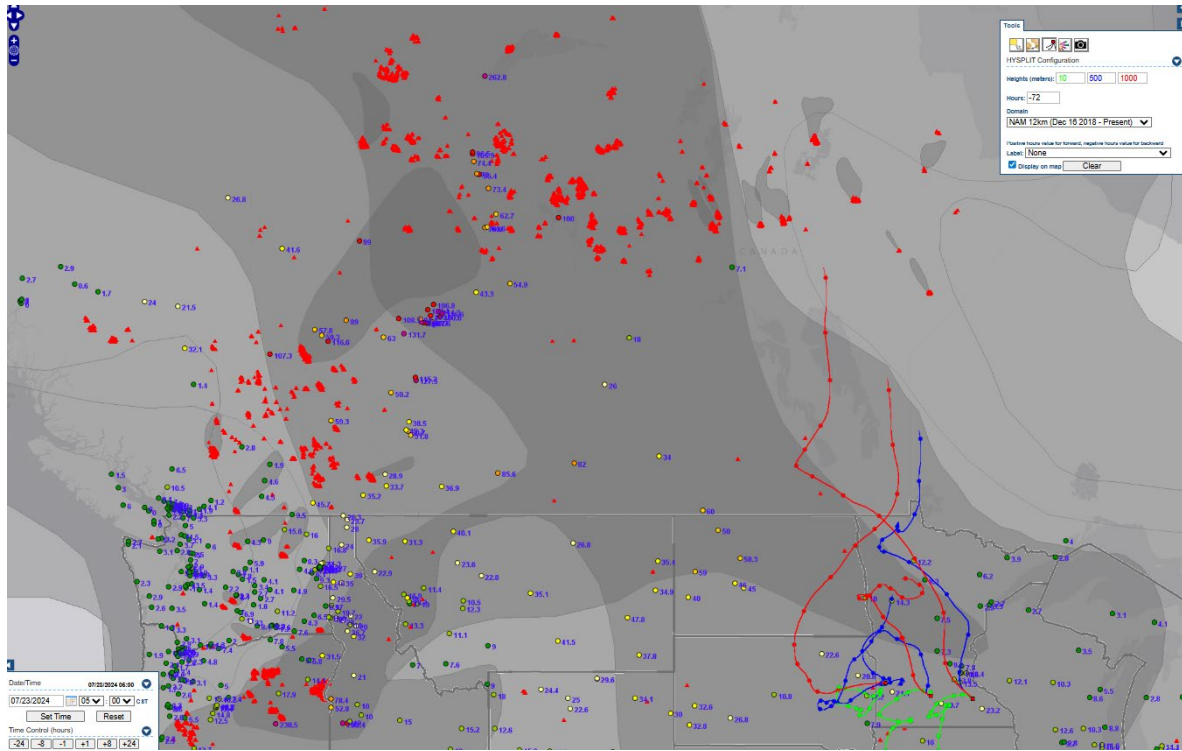
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 23, 2024.



MODIS visible satellite for July 23, 2024.



Aerosol Optical Depth from GOES EAST for July 23, 2024. Source: Aerosol Watch.



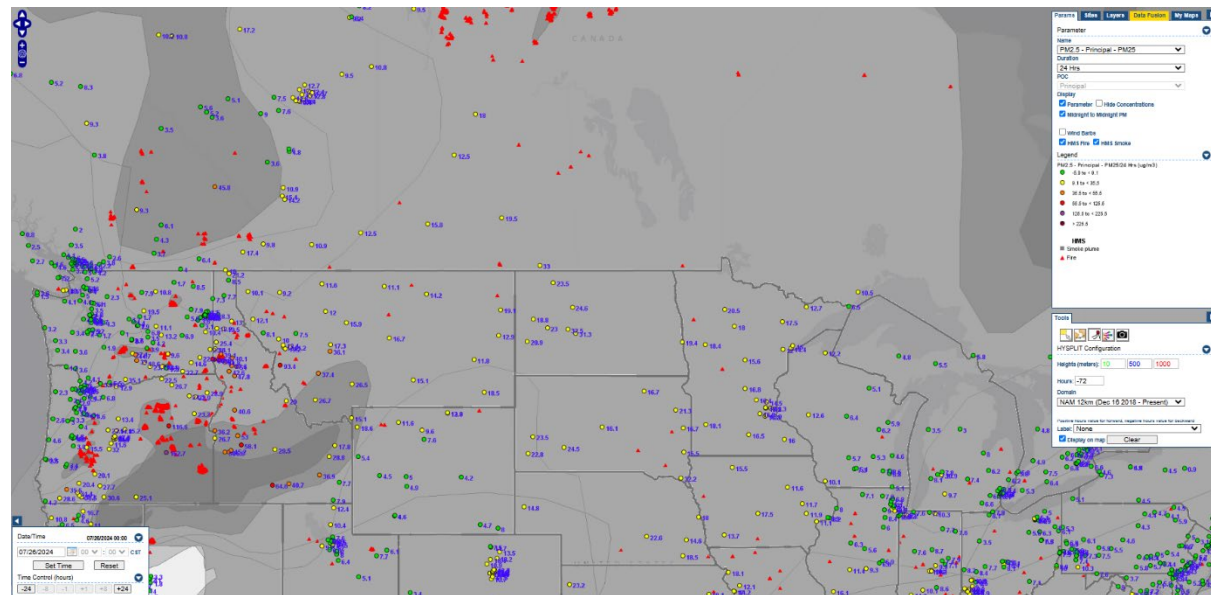
Backward trajectories for July 23, 2024.

7/26/2024 Impacts

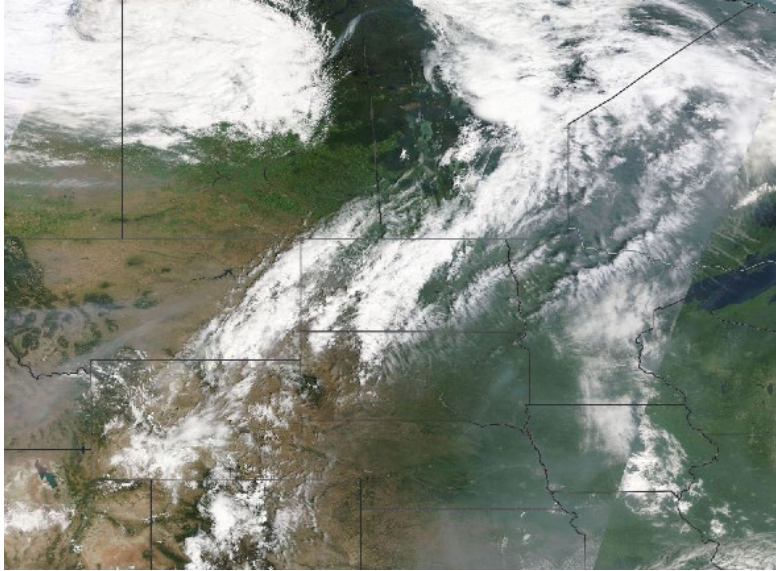
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 26, 2024.

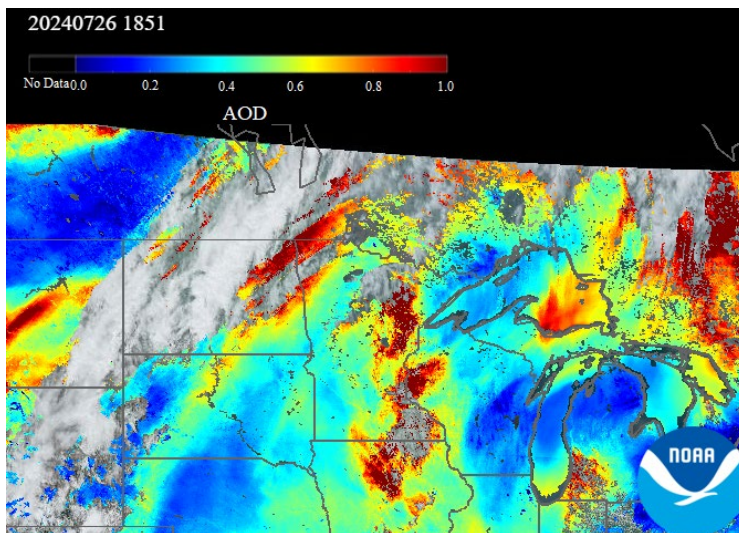
Site	Site AQS	Date (LST)	Daily average (µg/m3)	Max hour (µg/m3)	Notes
Detroit Lakes	270052013	7/26/2024	18.44	22	Canada Wildfire Smoke
Fargo NW	380171004	7/26/2024	19.46	24	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/26/2024	18.03	19.1	Canada Wildfire Smoke
Mankato - Rosa Parks	270135510	7/26/2024	16.51	19.2	Canada Wildfire Smoke
Marshall	270834210	7/26/2024	18.12	23.2	Canada Wildfire Smoke
Minneapolis - East Phillips	270531904	7/26/2024	17.23	20.3	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	7/26/2024	17.24	33	Canada Wildfire Smoke
Red Lake Nation	270072304	7/26/2024	20.58	23	Canada Wildfire Smoke
Rochester	271095008	7/26/2024	16.05	18.3	Canada Wildfire Smoke
Shakopee	271390505	7/26/2024	16.91	20.2	Canada Wildfire Smoke
St. Cloud	271453052	7/26/2024	16.84	19.3	Canada Wildfire Smoke
St. Michael	271713201	7/26/2024	16.46	18.4	Canada Wildfire Smoke
St. Paul-Harding	271230871	7/26/2024	15.31	18.6	Canada Wildfire Smoke
Virginia	271377001	7/26/2024	17.53	22.6	Canada Wildfire Smoke
West Duluth	271377554	7/26/2024	14.49	18.5	Canada Wildfire Smoke



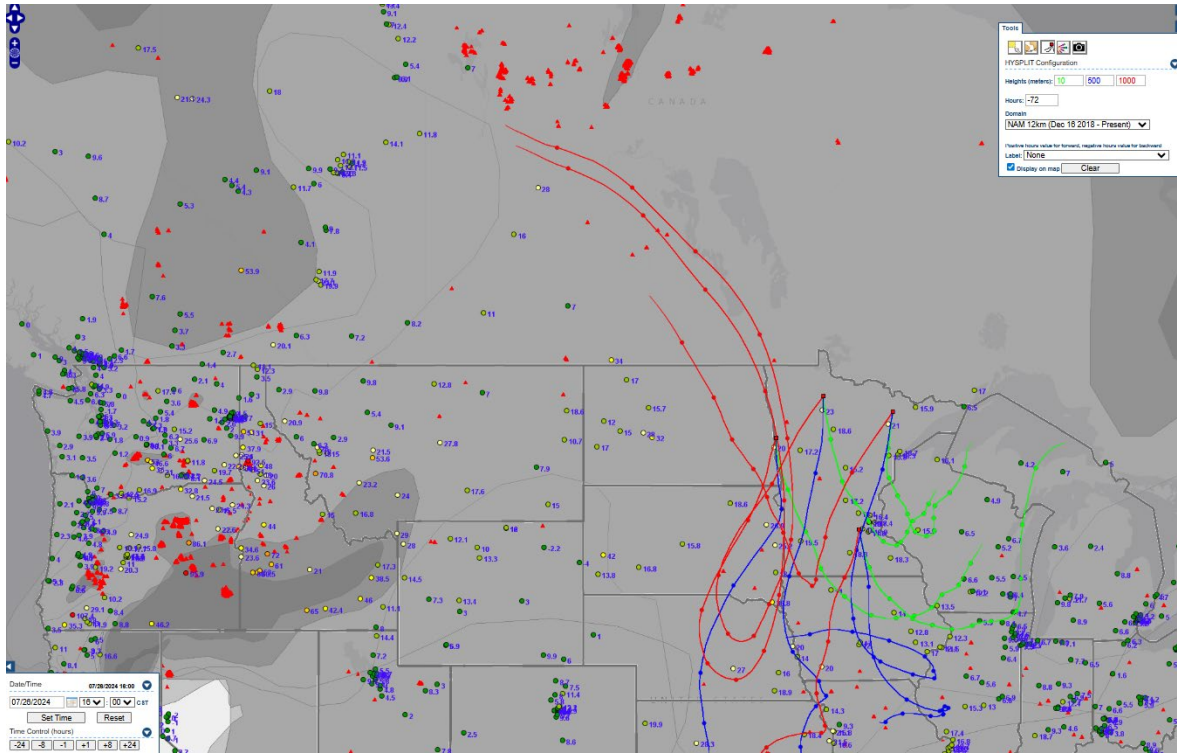
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 26, 2024.



MODIS visible satellite for July 26, 2024.



Aerosol Optical Depth from GOES EAST for July 26, 2024. Source: Aerosol Watch.



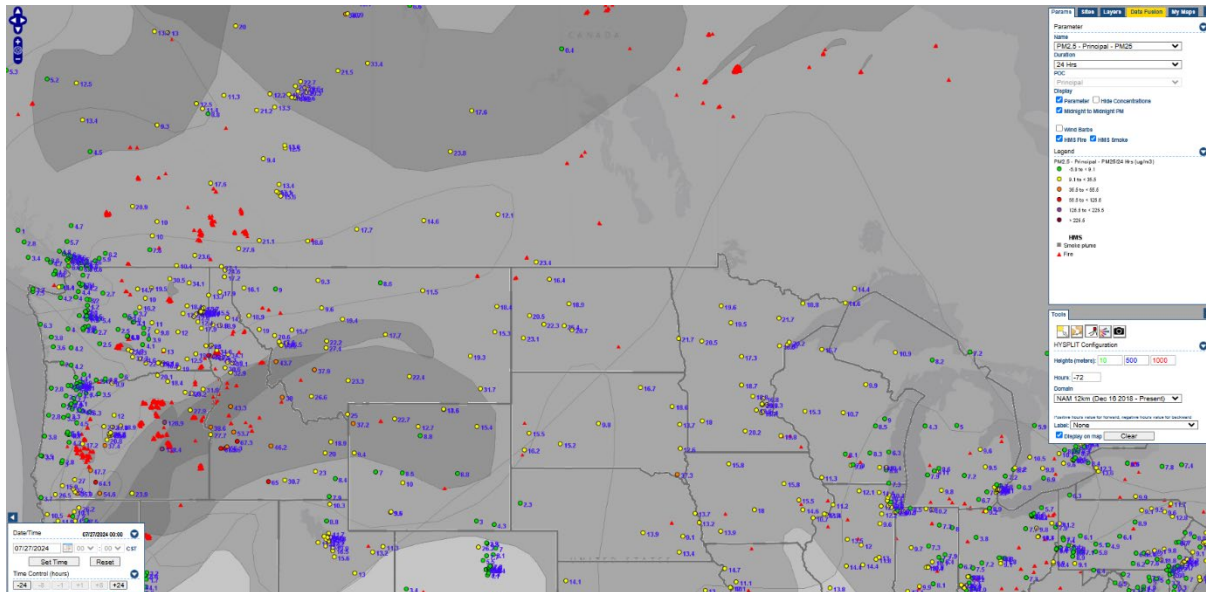
Backward trajectories for July 26, 2024.

7/27/2024 Impacts

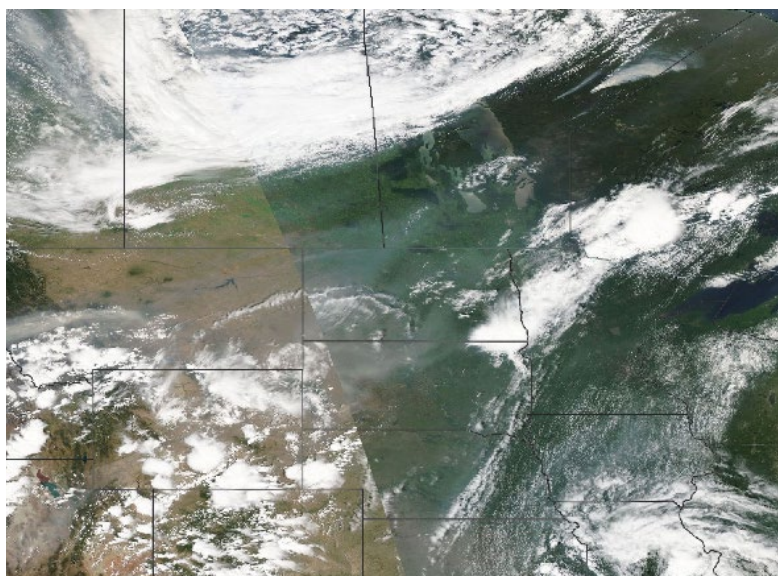
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 27, 2024.

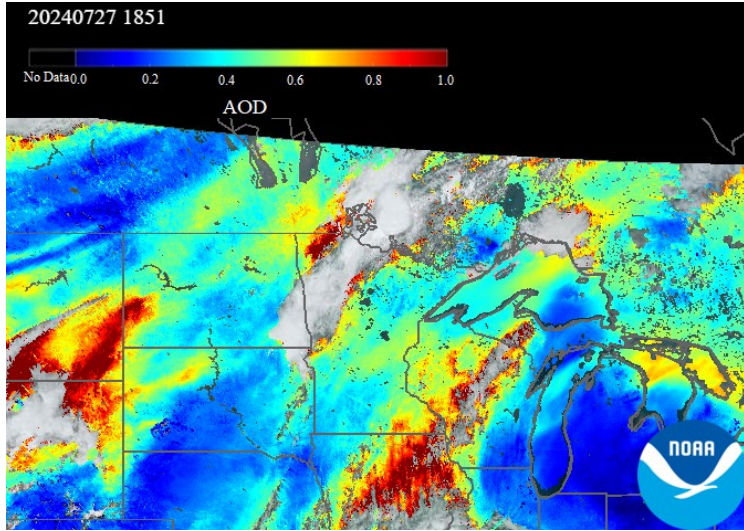
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	7/27/2024	20.44	24.1	Canada Wildfire Smoke
Blaine	270031002	7/27/2024	16.8	19.1	Canada Wildfire Smoke
Brainerd	270353204	7/27/2024	17.35	19.6	Canada Wildfire Smoke
Detroit Lakes	270052013	7/27/2024	20.54	24.5	Canada Wildfire Smoke
Duluth-WDSE	271377550	7/27/2024	20.28	24.1	Canada Wildfire Smoke
Ely	270750005	7/27/2024	18.83	21.4	Canada Wildfire Smoke
Fargo NW	380171004	7/27/2024	21.71	26	Canada Wildfire Smoke
Fond du Lac	270177417	7/27/2024	16.57	20.1	Canada Wildfire Smoke
Grand Portage	270317810	7/27/2024	14.67	15.8	Canada Wildfire Smoke
Lakeville - Near Road	270370480	7/27/2024	16.78	19.4	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/27/2024	19.56	22.2	Canada Wildfire Smoke
Mankato - Rosa Parks	270135510	7/27/2024	20.26	24.2	Canada Wildfire Smoke
Marshall	270834210	7/27/2024	18.07	21.3	Canada Wildfire Smoke
Minneapolis - Anderson	270530963	7/27/2024	18.92	21.7	Canada Wildfire Smoke
Minneapolis - East Phillips	270531904	7/27/2024	20.04	22.7	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	7/27/2024	18.98	38.1	Canada Wildfire Smoke
Red Lake Nation	270072304	7/27/2024	19.7	25.4	Canada Wildfire Smoke
Rochester	271095008	7/27/2024	19.82	23.4	Canada Wildfire Smoke
Shakopee	271390505	7/27/2024	19.64	23.1	Canada Wildfire Smoke
St. Cloud	271453052	7/27/2024	18.78	21.3	Canada Wildfire Smoke
St. Michael	271713201	7/27/2024	18.8	21.8	Canada Wildfire Smoke
St. Paul-Harding	271230871	7/27/2024	19.31	22.2	Canada Wildfire Smoke
Virginia	271377001	7/27/2024	21.74	25.5	Canada Wildfire Smoke
West Duluth	271377554	7/27/2024	20.03	23.8	Canada Wildfire Smoke



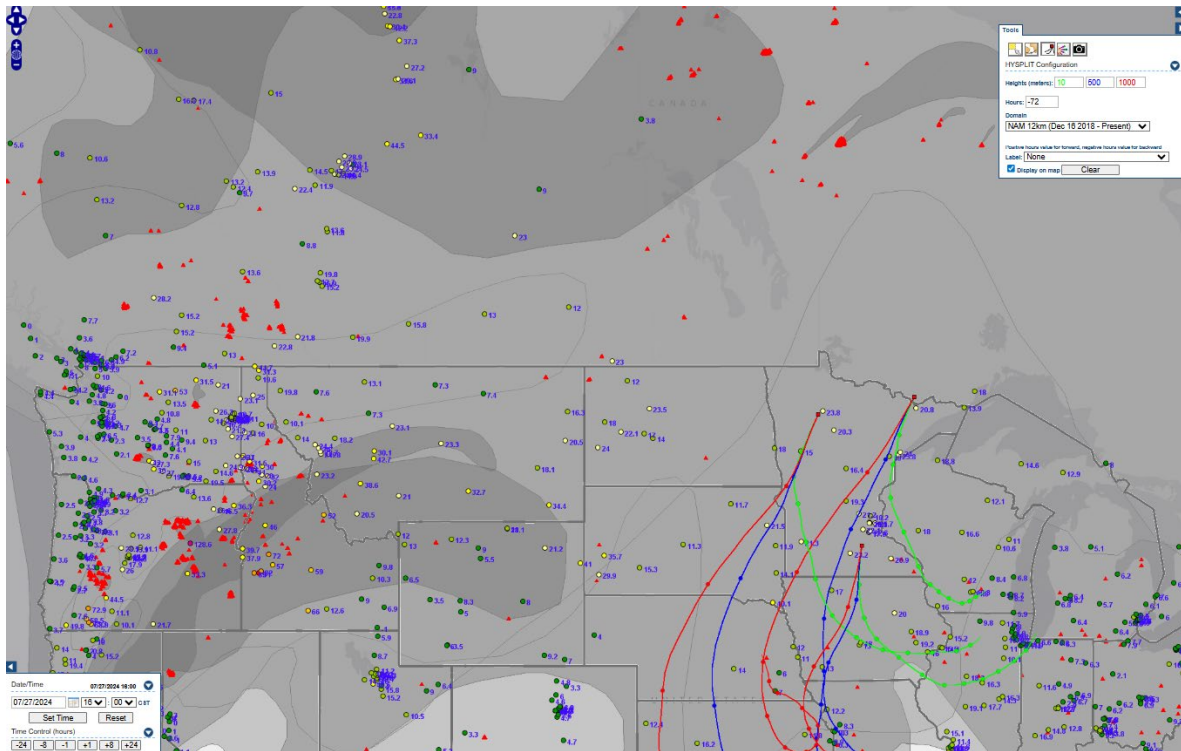
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 27, 2024.



MODIS visible satellite for July 27, 2024.



Aerosol Optical Depth from GOES EAST for July 27, 2024. Source: Aerosol Watch.



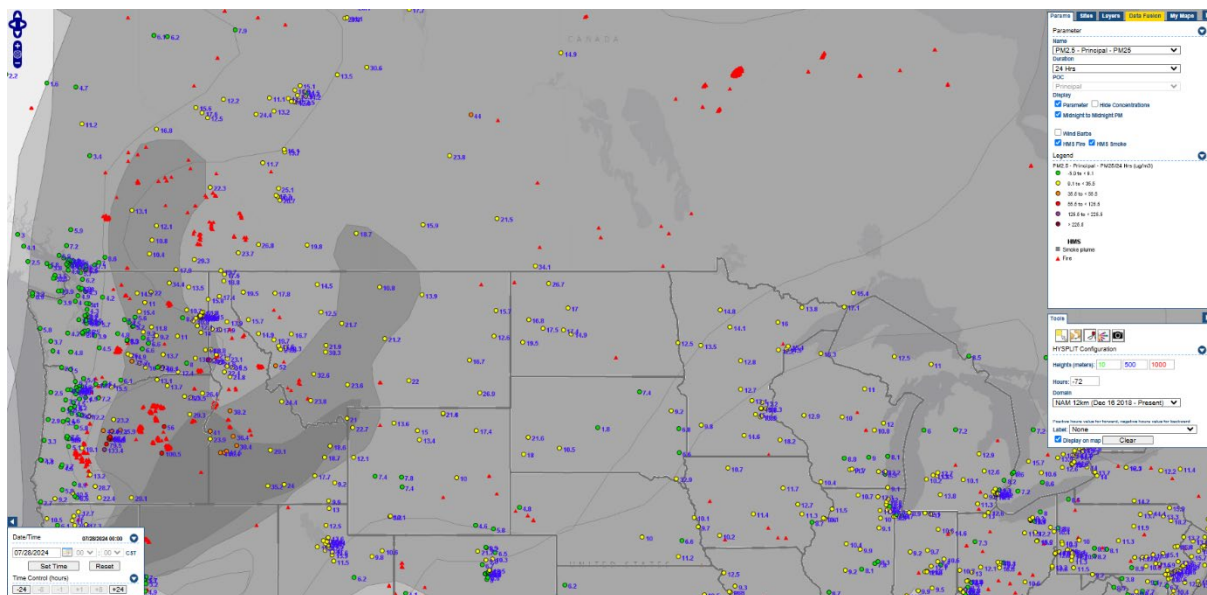
Backward trajectories for July 27, 2024.

7/28/2024 Impacts

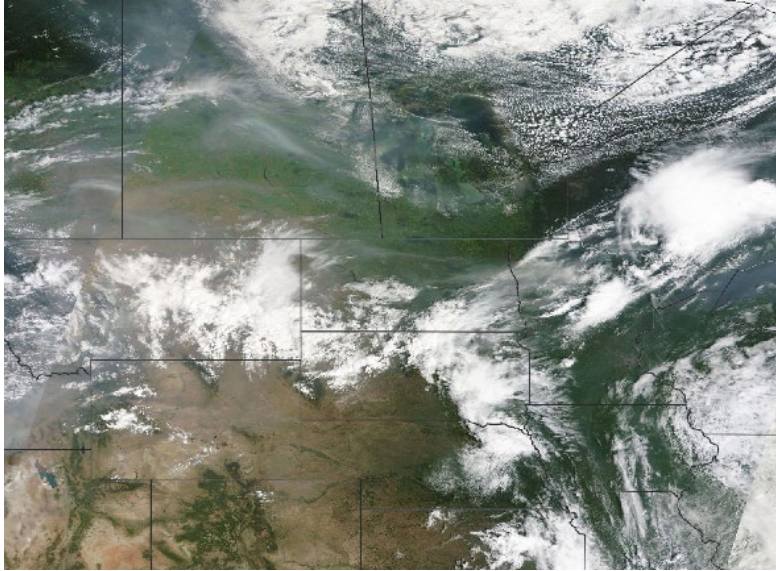
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 28, 2024.

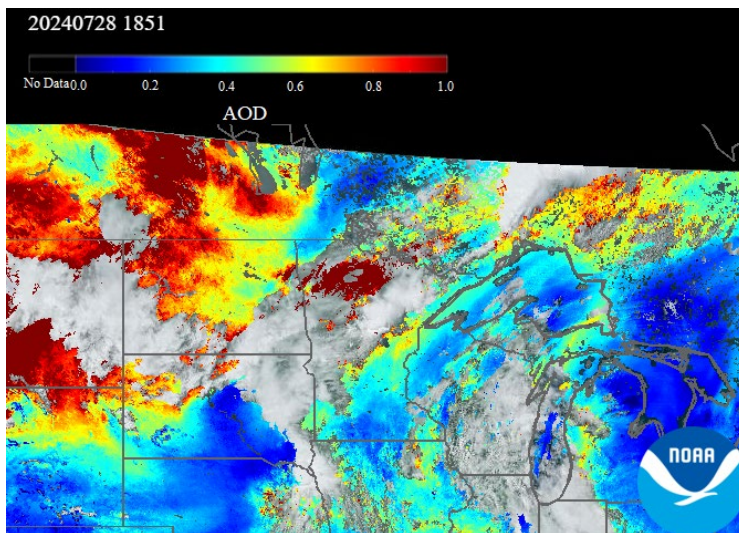
Site	Site AQS	Date (LST)	Daily average (µg/m3)	Max hour (µg/m3)	Notes
Duluth-WDSE	271377550	7/28/2024	15.46	21.3	Canada Wildfire Smoke
Grand Portage	270317810	7/28/2024	17.18	18.7	Canada Wildfire Smoke
Rochester	271095008	7/28/2024	18.22	23.7	Canada Wildfire Smoke
Virginia	271377001	7/28/2024	16.03	23	Canada Wildfire Smoke



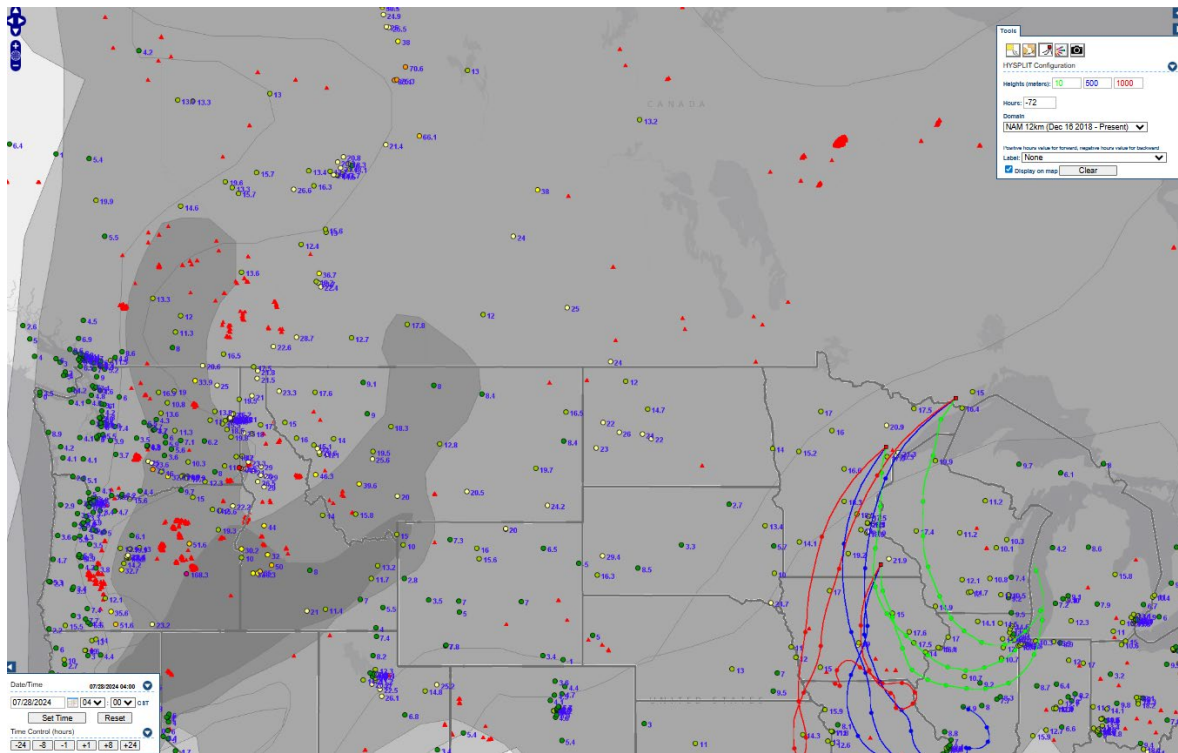
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 28, 2024.



MODIS visible satellite for July 28, 2024.



Aerosol Optical Depth from GOES EAST for July 28, 2024. Source: Aerosol Watch.



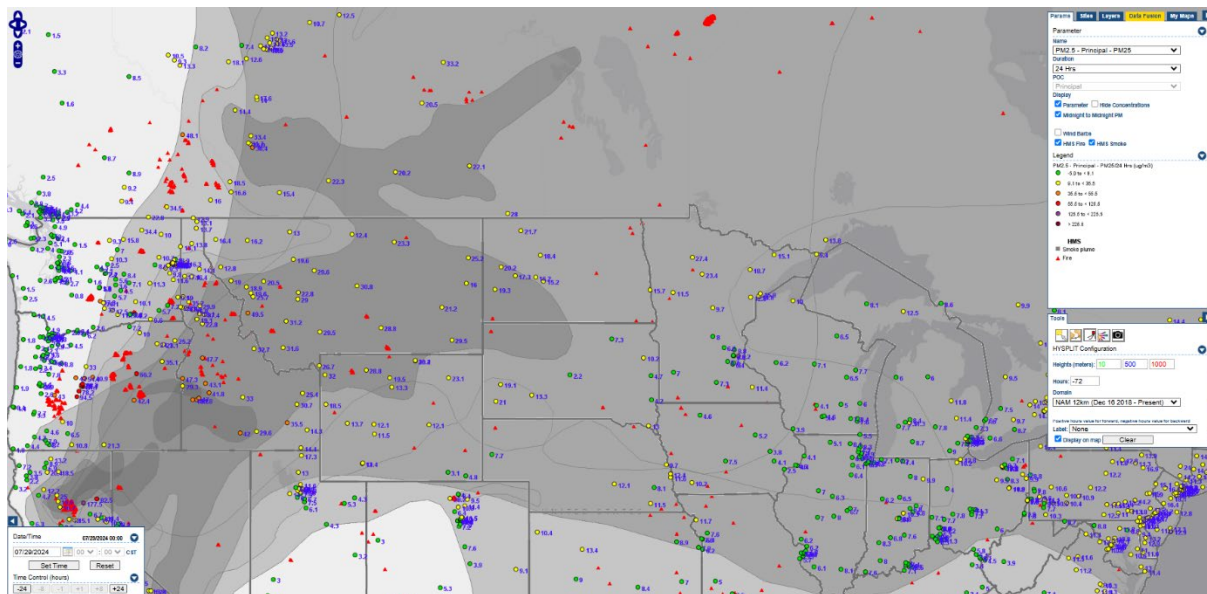
Backward trajectories for July 28, 2024.

7/29/2024 Impacts

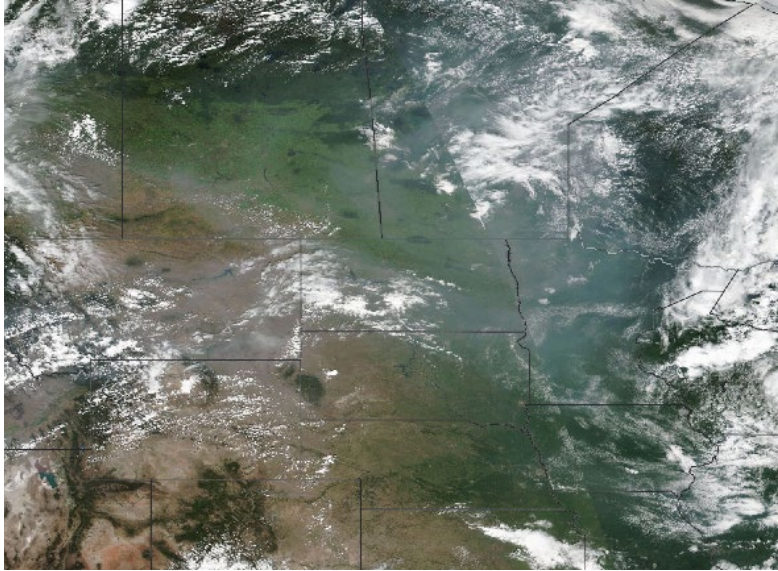
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 29, 2024.

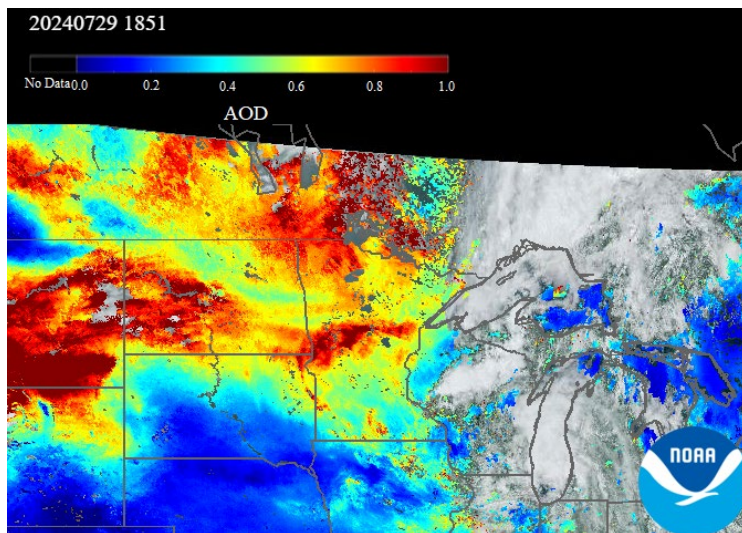
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Duluth-WDSE	271377550	7/29/2024	15.8	30.9	Canada Wildfire Smoke
Ely	270750005	7/29/2024	15.12	25.8	Canada Wildfire Smoke
Leech Lake Nation	270213410	7/29/2024	23.5	30	Canada Wildfire Smoke
Red Lake Nation	270072304	7/29/2024	27.4	37.3	Canada Wildfire Smoke
Virginia	271377001	7/29/2024	18.78	28.3	Canada Wildfire Smoke
West Duluth	271377554	7/29/2024	14.86	28.5	Canada Wildfire Smoke



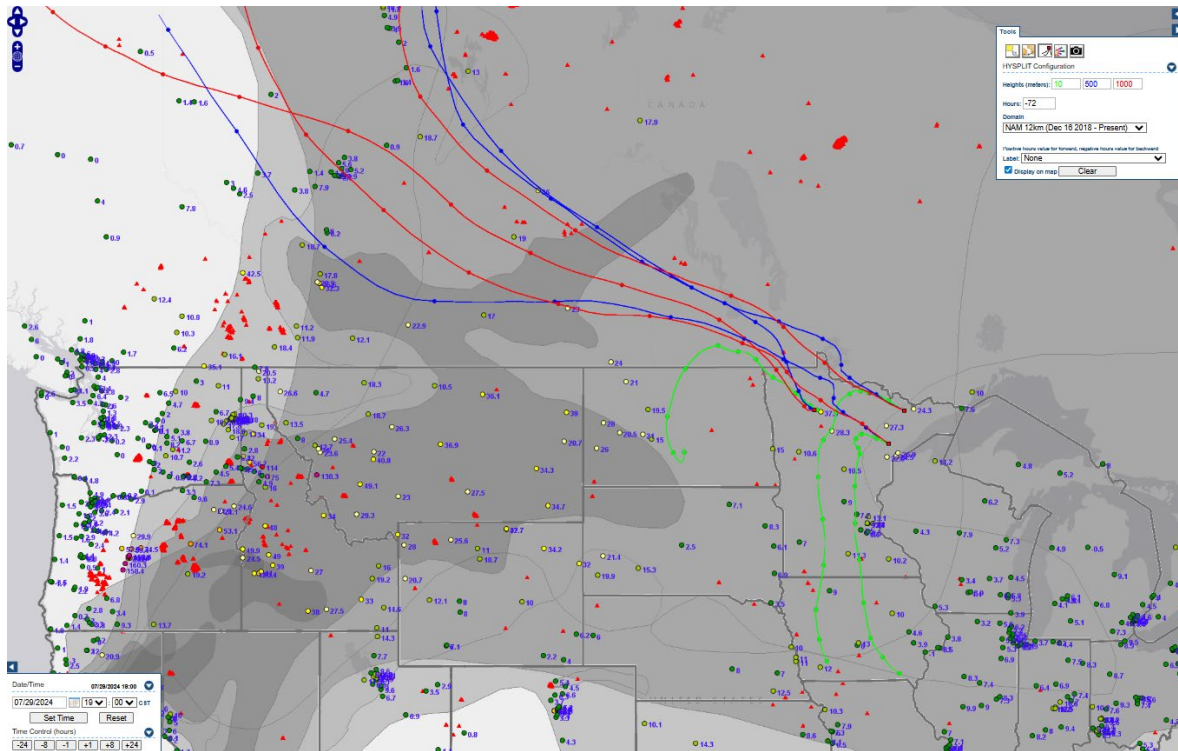
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 29, 2024.



MODIS visible satellite for July 29, 2024.



Aerosol Optical Depth from GOES EAST for July 29, 2024. Source: Aerosol Watch.



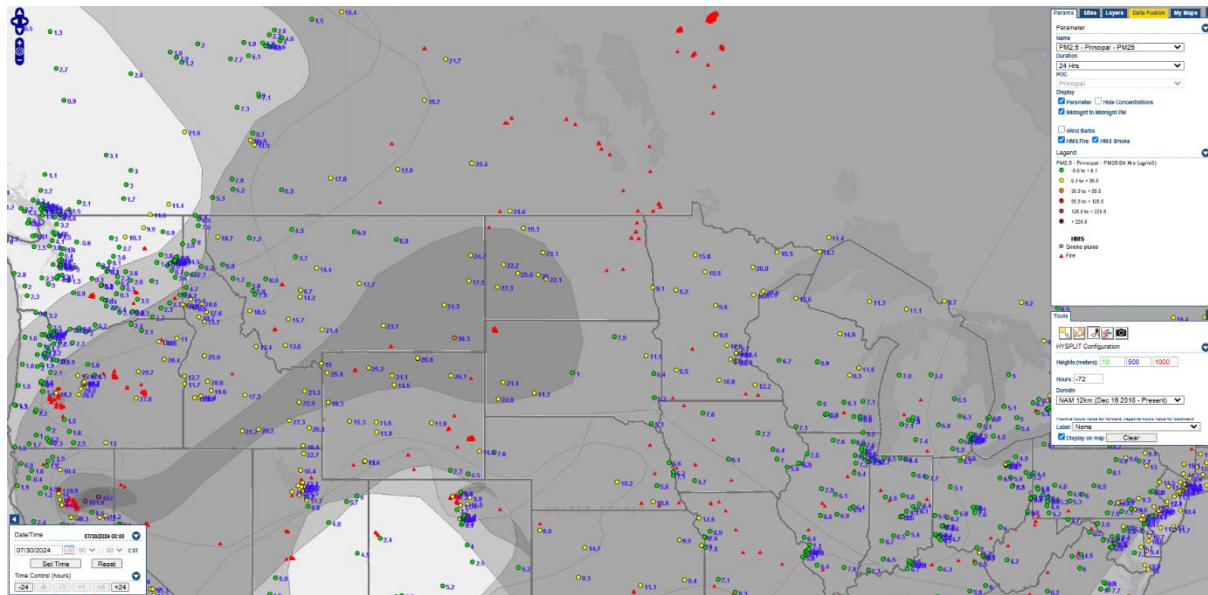
Backward trajectories for July 29, 2024.

7/30/2024 Impacts

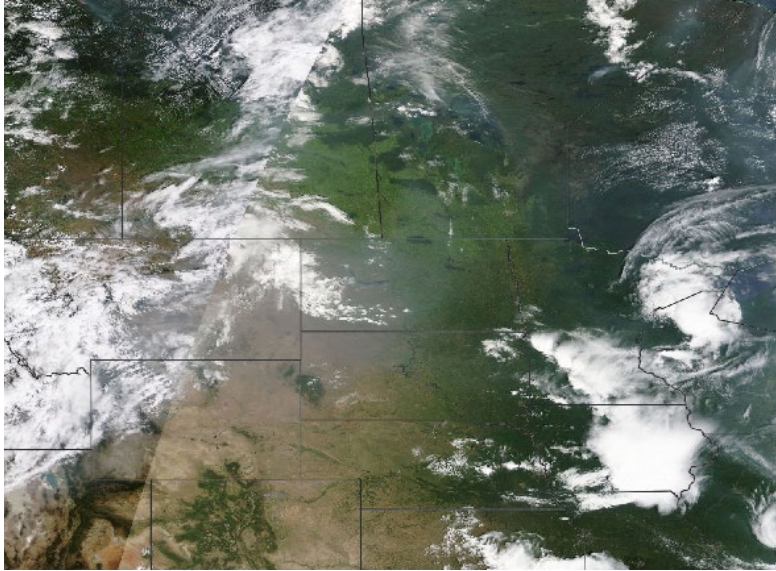
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 30, 2024.

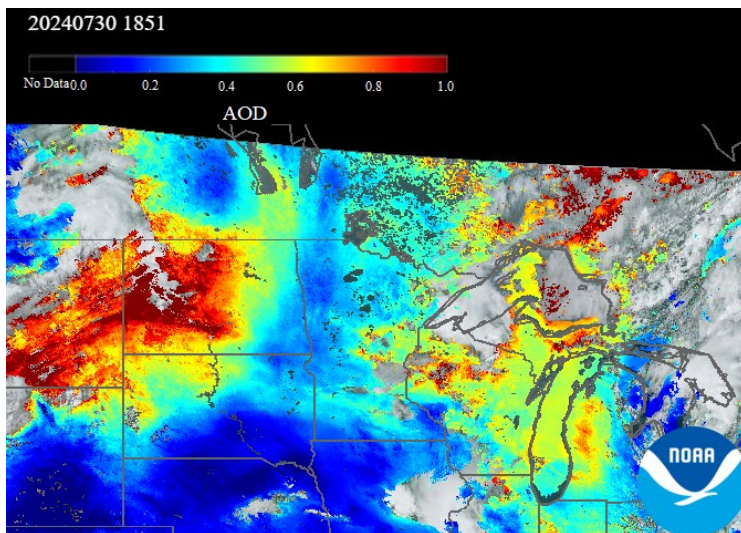
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Duluth-WDSE	271377550	7/30/2024	21.61	27	Canada Wildfire Smoke
Ely	270750005	7/30/2024	18.55	19.5	Canada Wildfire Smoke
Fond du Lac	270177417	7/30/2024	16.49	20.8	Canada Wildfire Smoke
Grand Portage	270317810	7/30/2024	14.71	20.4	Canada Wildfire Smoke
Red Lake Nation	270072304	7/30/2024	15.89	30	Canada Wildfire Smoke
Virginia	271377001	7/30/2024	20.92	26.1	Canada Wildfire Smoke
West Duluth	271377554	7/30/2024	21.58	26.9	Canada Wildfire Smoke



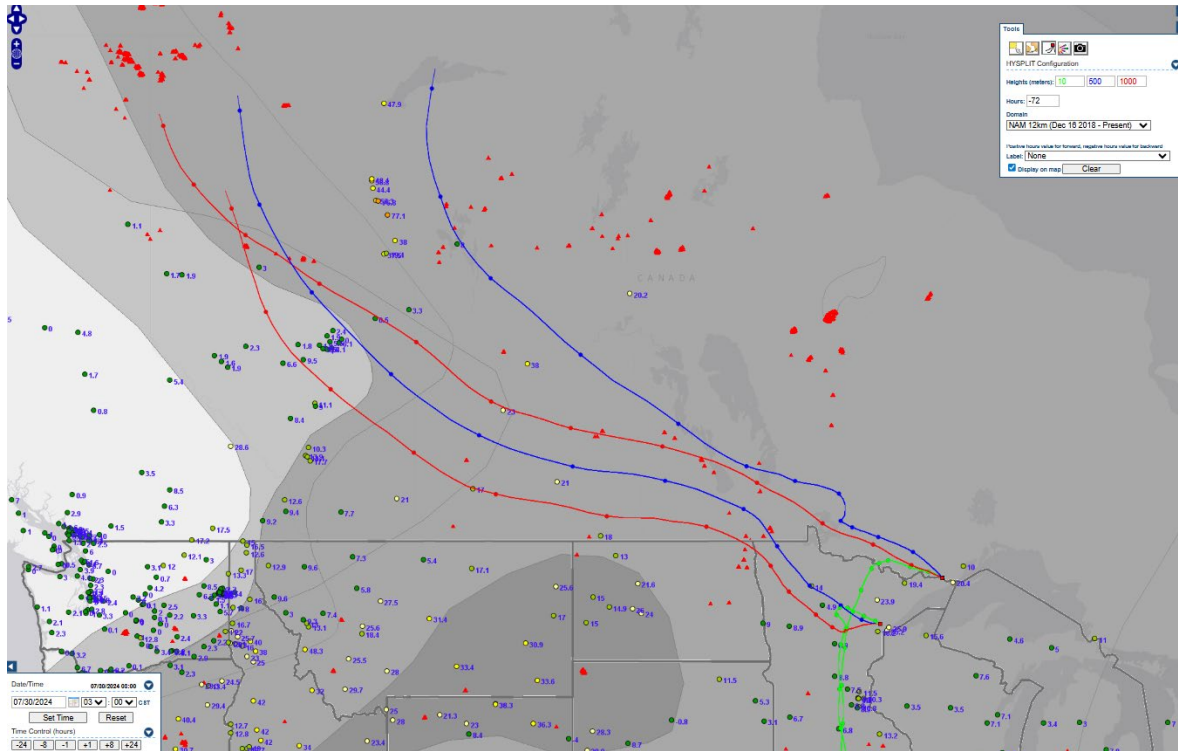
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 30, 2024.



MODIS visible satellite for July 30, 2024.



Aerosol Optical Depth from GOES EAST for July 30, 2024. Source: Aerosol Watch.



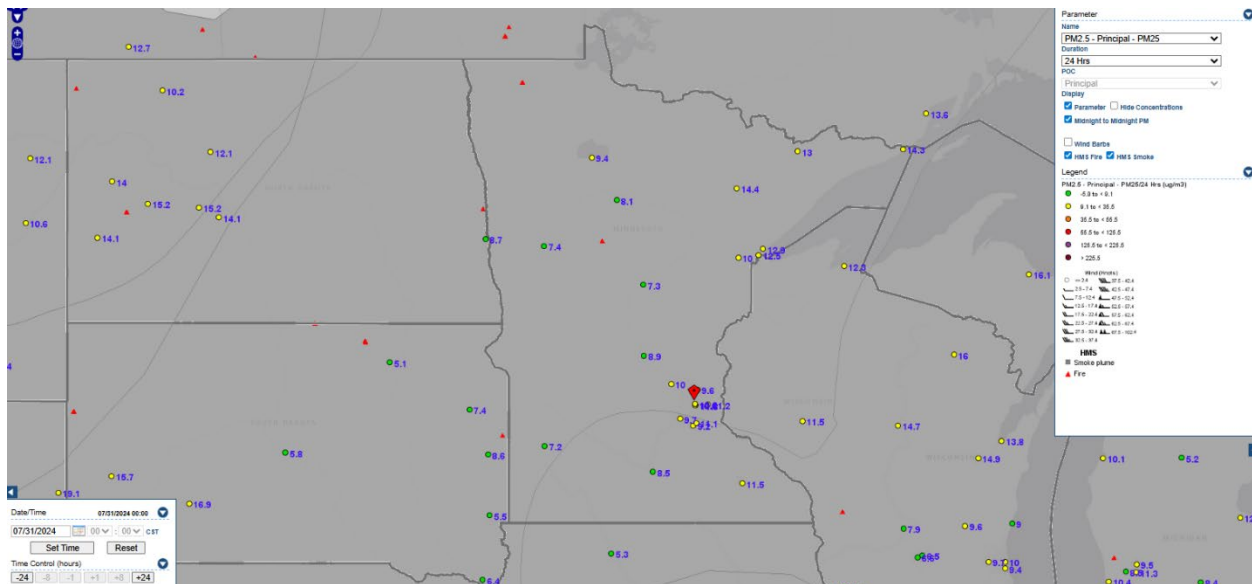
Backward trajectories for July 30, 2024.

7/31/2024 Impacts

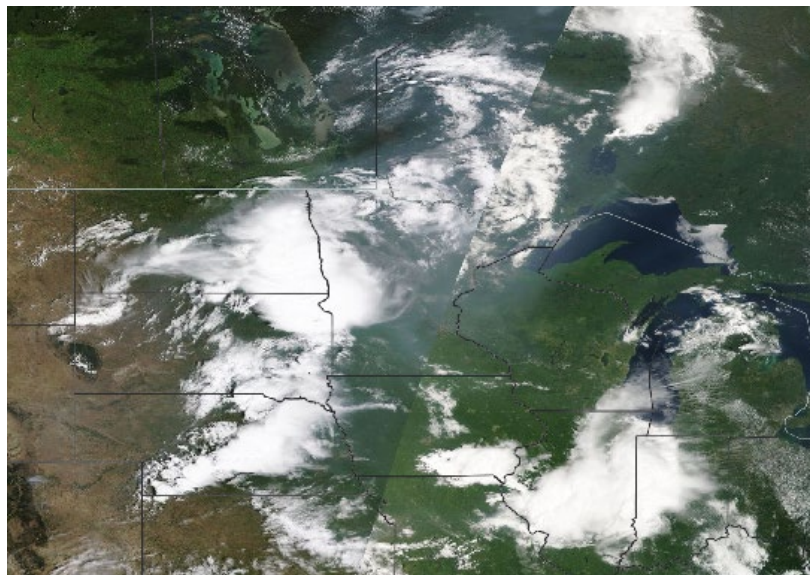
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on July 31, 2024.

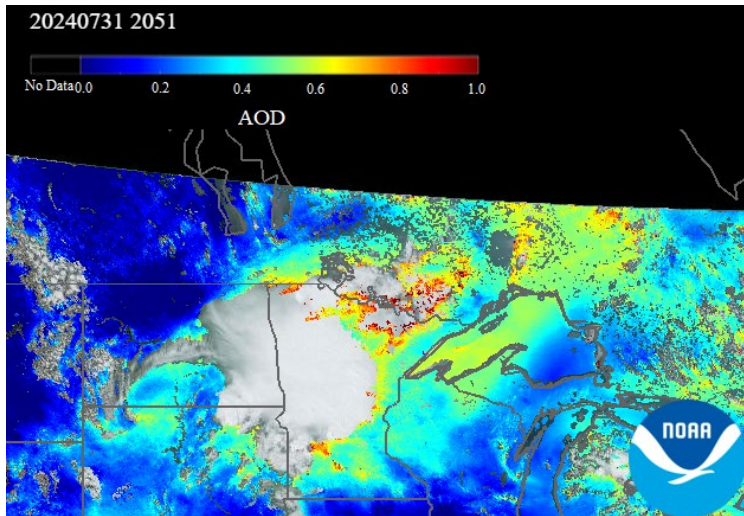
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Grand Portage	270317810	7/31/2024	14.37	18.7	Canada Wildfire Smoke
Virginia	271377001	7/31/2024	14.48	19.4	Canada Wildfire Smoke



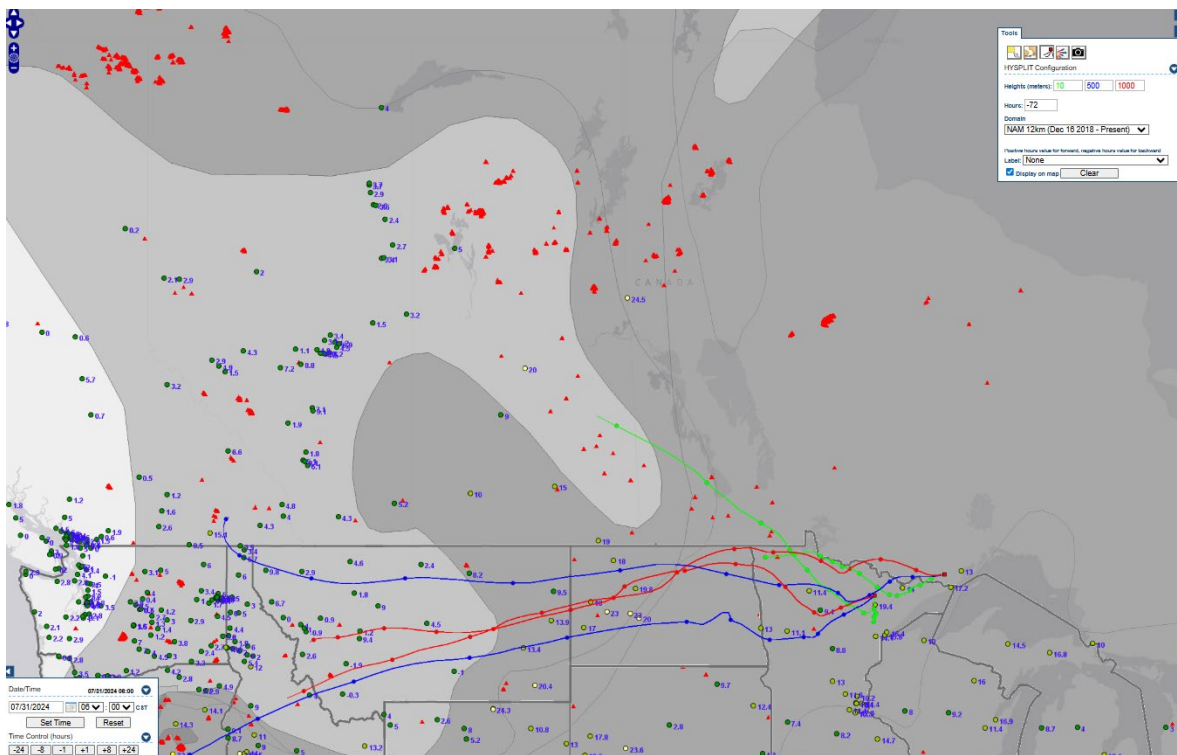
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on July 31, 2024.



MODIS visible satellite for July 31, 2024.



Aerosol Optical Depth from GOES EAST for July 31, 2024. Source: Aerosol Watch.



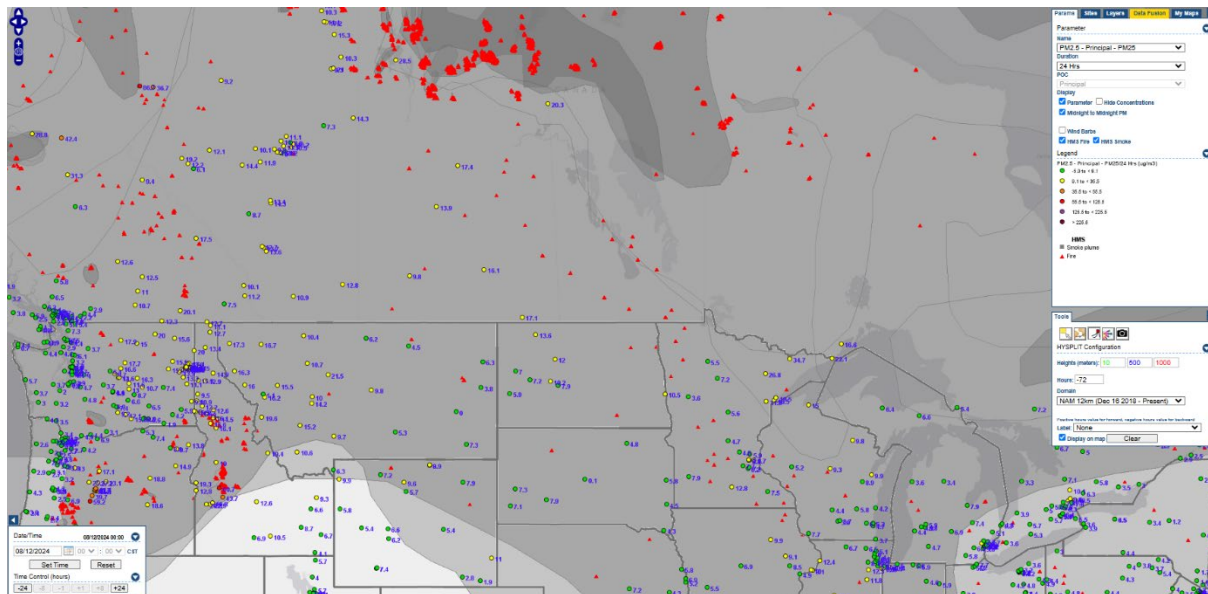
Backward trajectories for July 31, 2024.

8/12/2024 Impacts

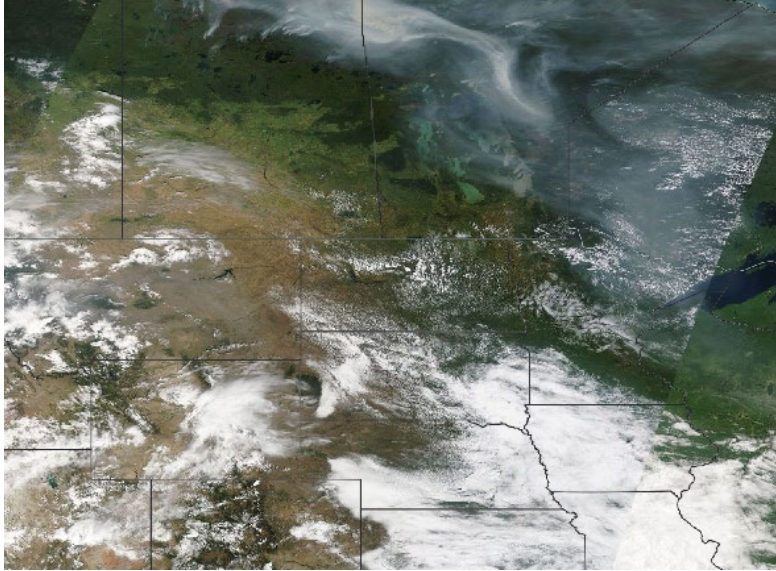
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 12, 2024.

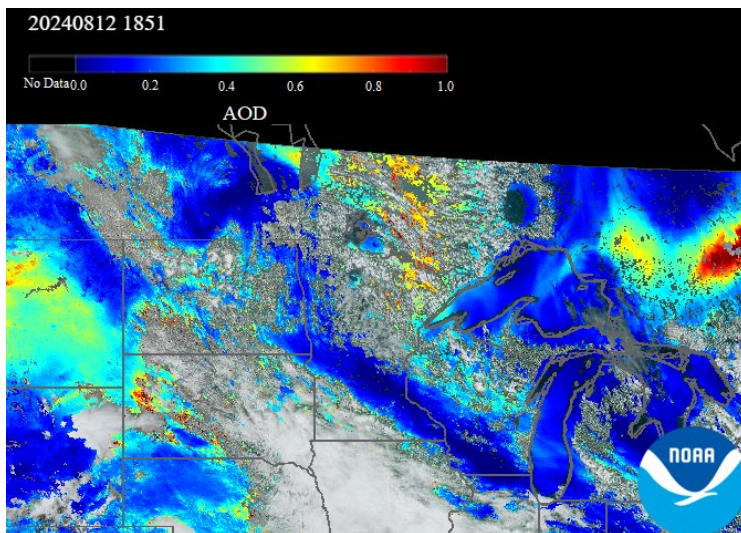
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Duluth-WDSE	271377550	8/12/2024	19.52	29.1	Canada Wildfire Smoke
Ely	270750005	8/12/2024	34.79	51.7	Canada Wildfire Smoke
Fond du Lac	270177417	8/12/2024	11.82	18.1	Canada Wildfire Smoke
Grand Portage	270317810	8/12/2024	22.13	28.5	Canada Wildfire Smoke
Virginia	271377001	8/12/2024	26.81	43.1	Canada Wildfire Smoke
West Duluth	271377554	8/12/2024	16.5	26	Canada Wildfire Smoke



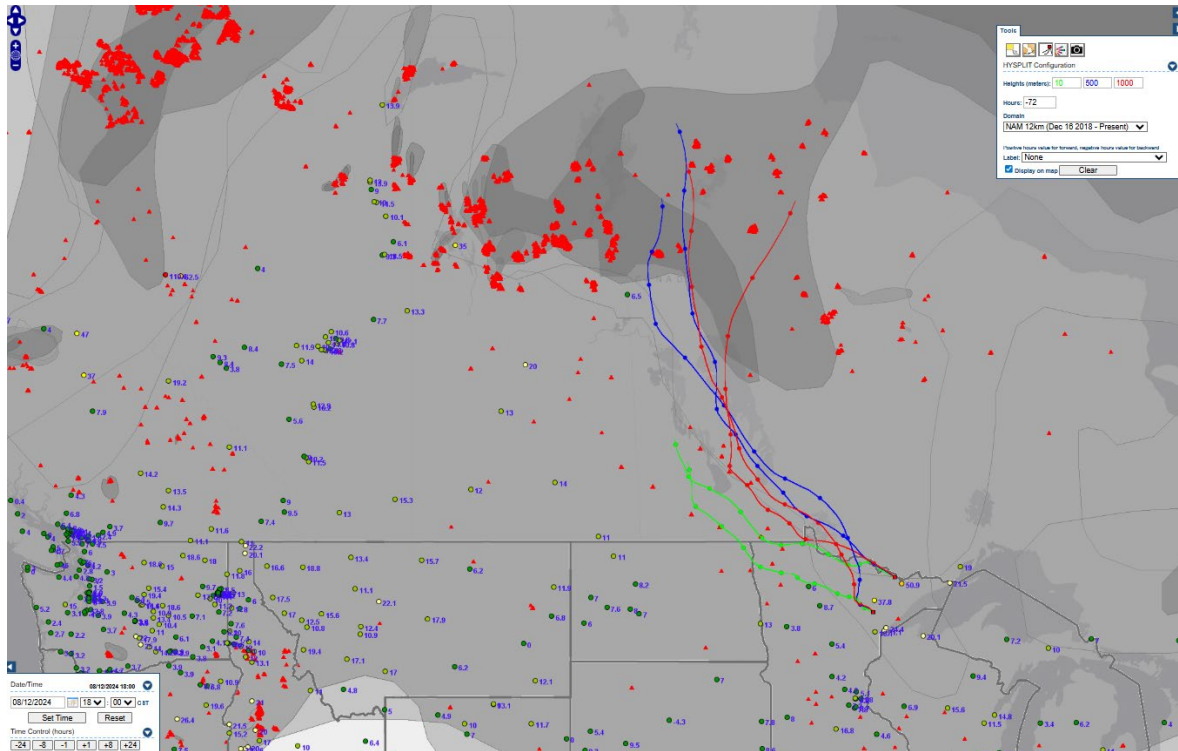
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 12, 2024.



MODIS visible satellite for August 12, 2024.



Aerosol Optical Depth from GOES EAST for August 12, 2024. Source: Aerosol Watch.



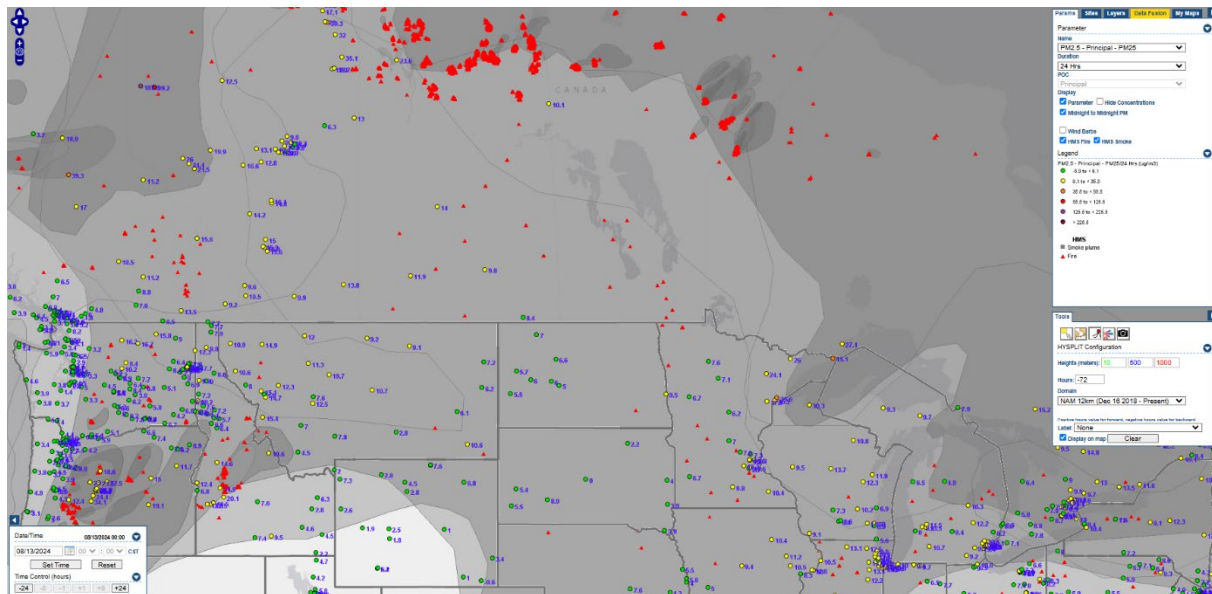
Backward trajectories for August 12, 2024.

8/13/2024 Impacts

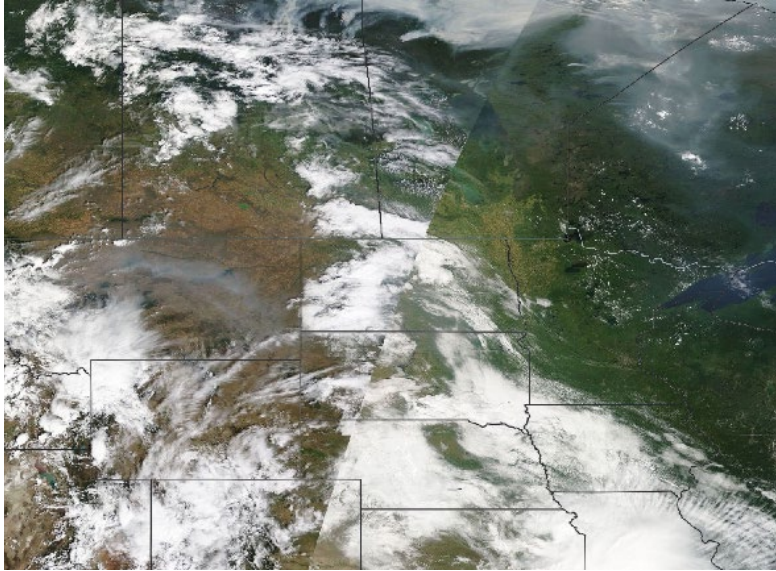
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 13, 2024.

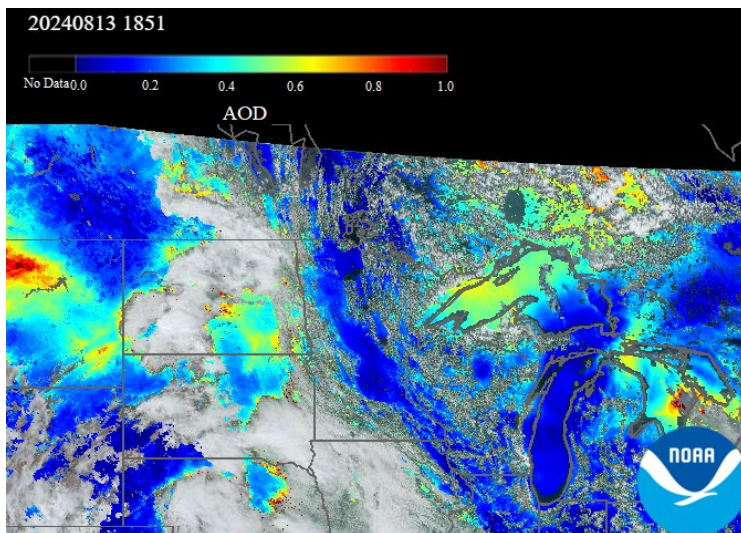
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Duluth-WDSE	271377550	8/13/2024	35.68	44.3	Canada Wildfire Smoke
Ely	270750005	8/13/2024	26.05	35.6	Canada Wildfire Smoke
Fond du Lac	270177417	8/13/2024	17.9	28.5	Canada Wildfire Smoke
Grand Portage	270317810	8/13/2024	45.17	52.7	Canada Wildfire Smoke
Virginia	271377001	8/13/2024	24.14	33.2	Canada Wildfire Smoke
West Duluth	271377554	8/13/2024	35.25	43.6	Canada Wildfire Smoke



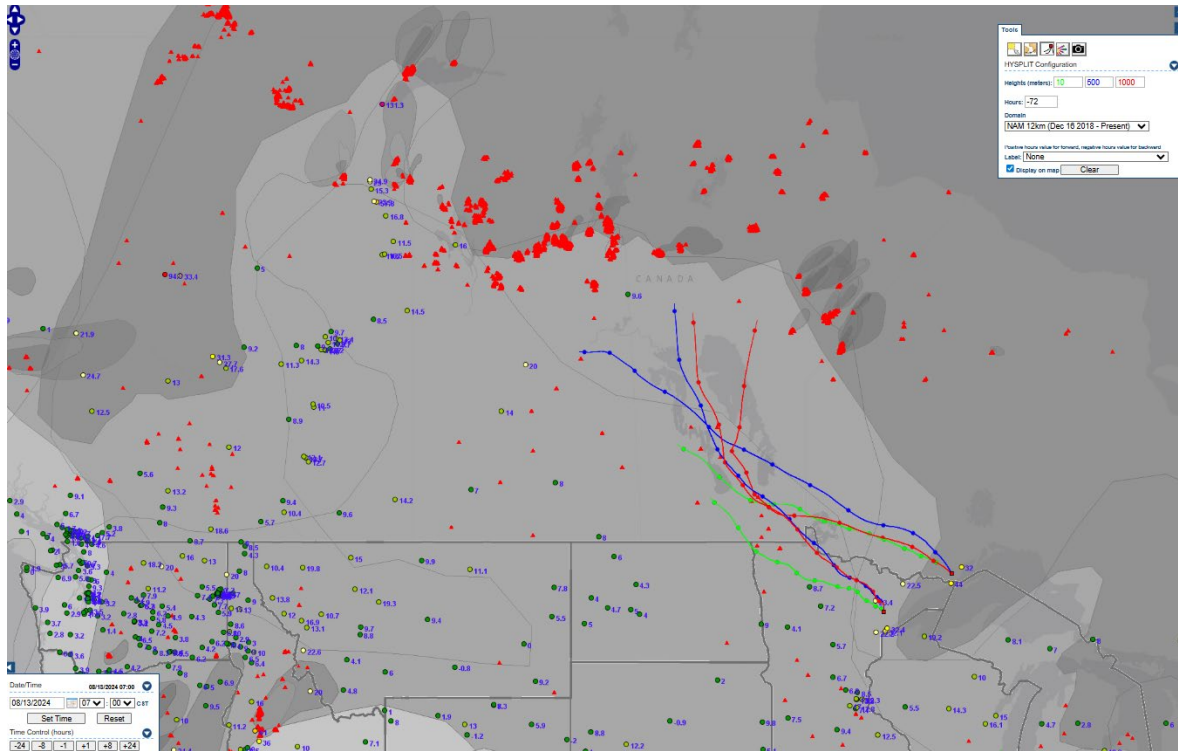
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 13, 2024.



MODIS visible satellite for August 13, 2024.



Aerosol Optical Depth from GOES EAST for August 13, 2024. Source: Aerosol Watch.



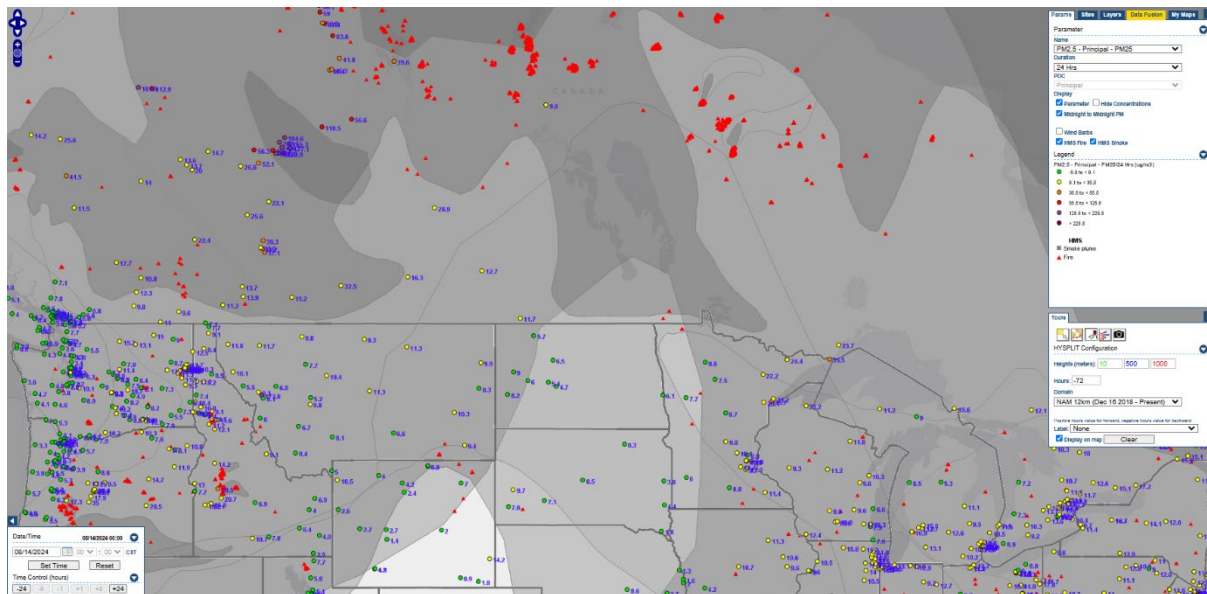
Backward trajectories for August 13, 2024.

8/14/2024 Impacts

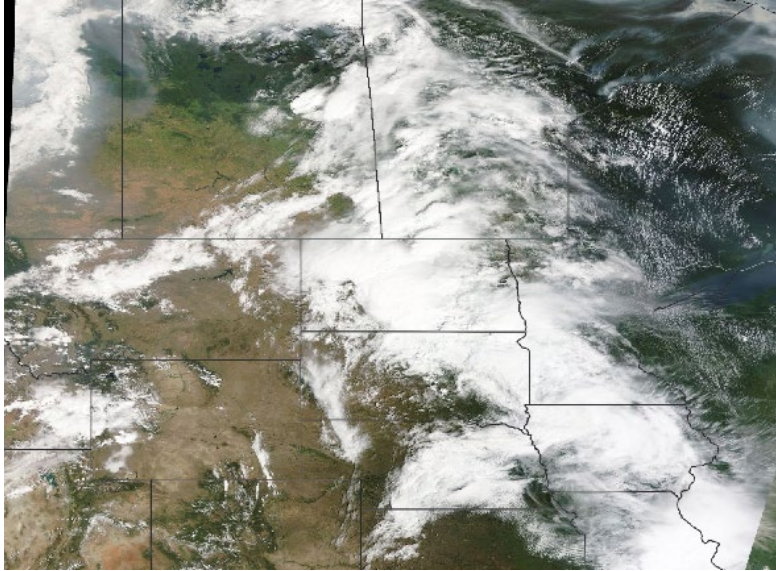
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 14, 2024.

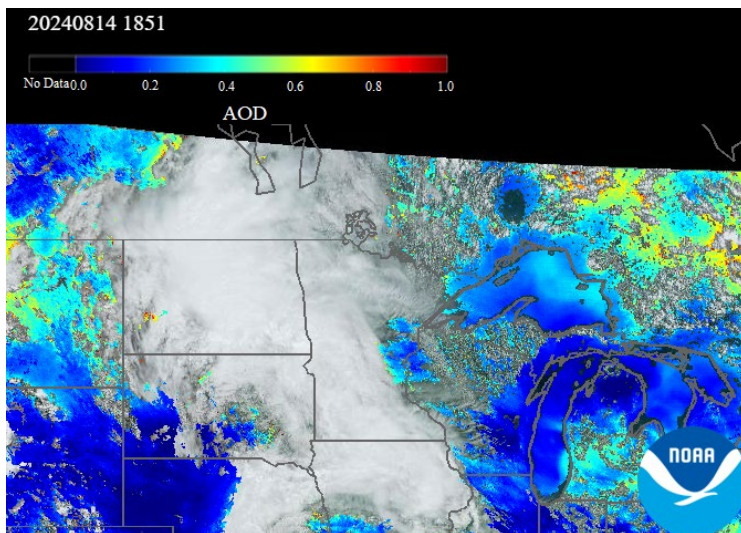
Site	Site AQS	Date (LST)	Daily average (µg/m3)	Max hour (µg/m3)	Notes
Duluth-WDSE	271377550	8/14/2024	31.29	43.2	Canada Wildfire Smoke
Ely	270750005	8/14/2024	24.44	38.4	Canada Wildfire Smoke
Fond du Lac	270177417	8/14/2024	20.16	31.1	Canada Wildfire Smoke
Grand Portage	270317810	8/14/2024	35.59	48.4	Canada Wildfire Smoke
Virginia	271377001	8/14/2024	22.29	36.6	Canada Wildfire Smoke
West Duluth	271377554	8/14/2024	35.7	43.6	Canada Wildfire Smoke



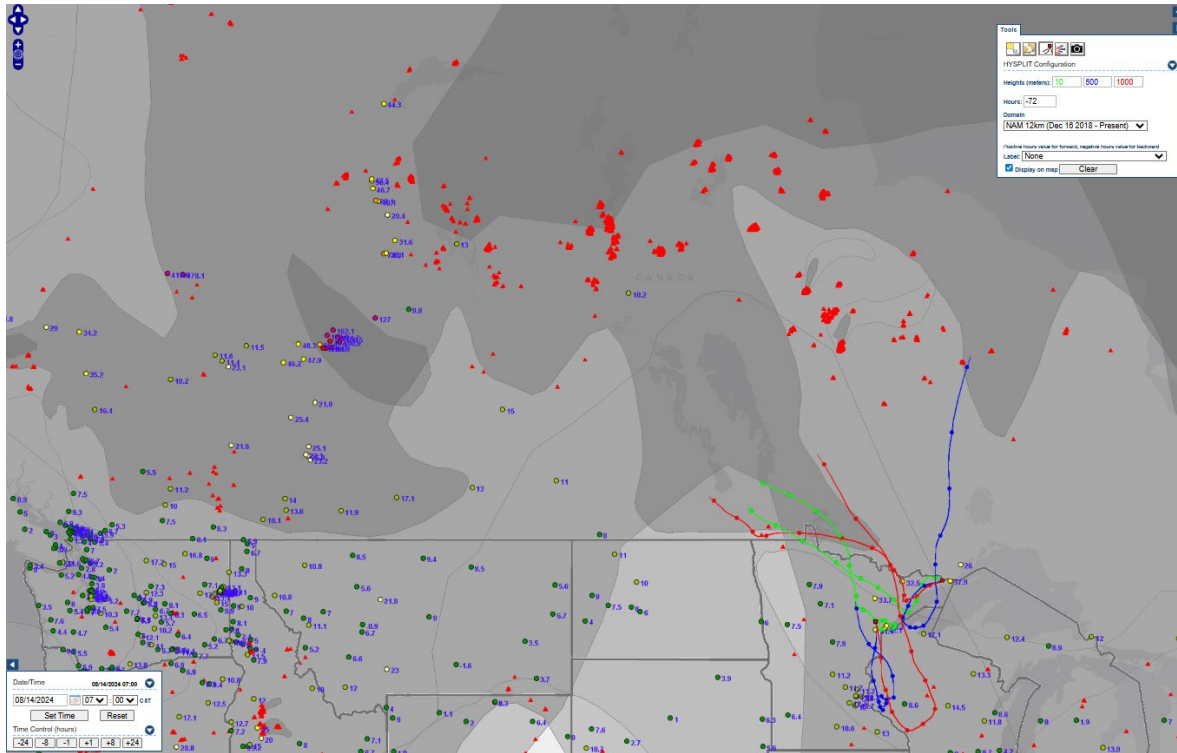
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 14, 2024.



MODIS visible satellite for August 14, 2024.



Aerosol Optical Depth from GOES EAST for August 14, 2024. Source: Aerosol Watch.



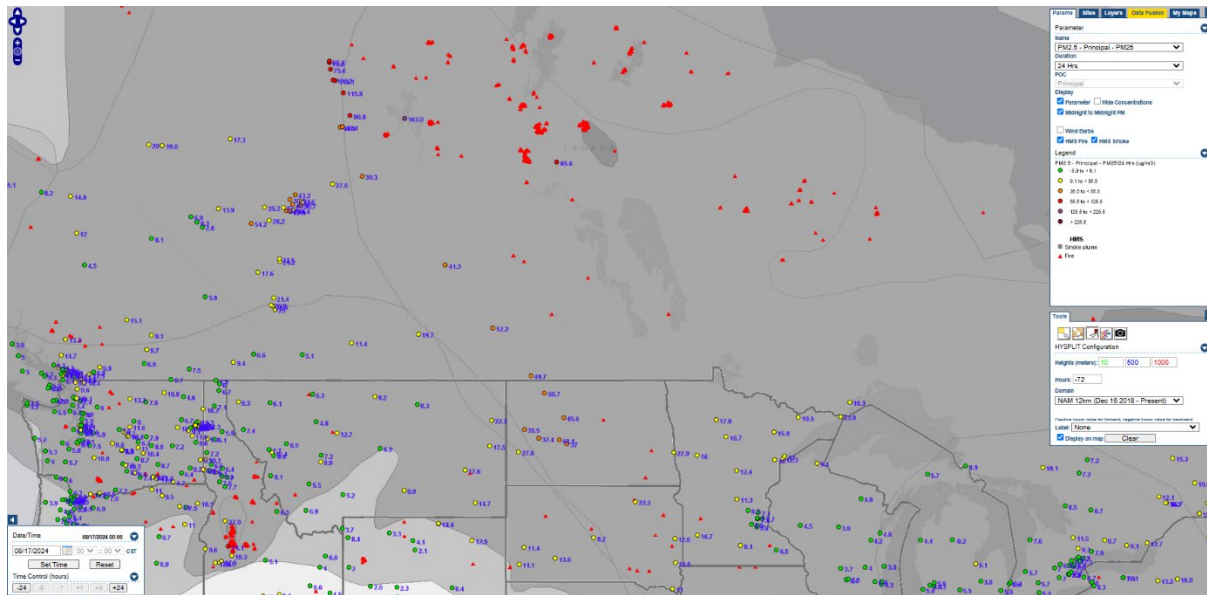
Backward trajectories for August 14, 2024.

8/17/2024 Impacts

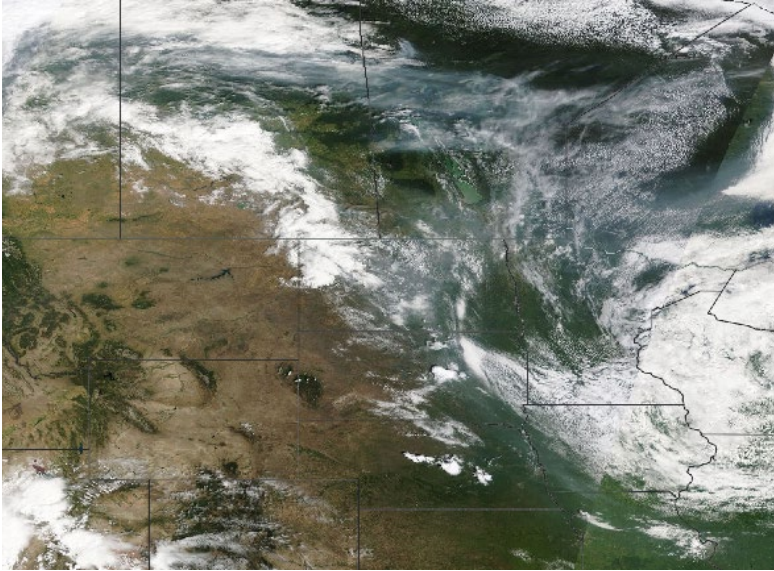
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 17, 2024.

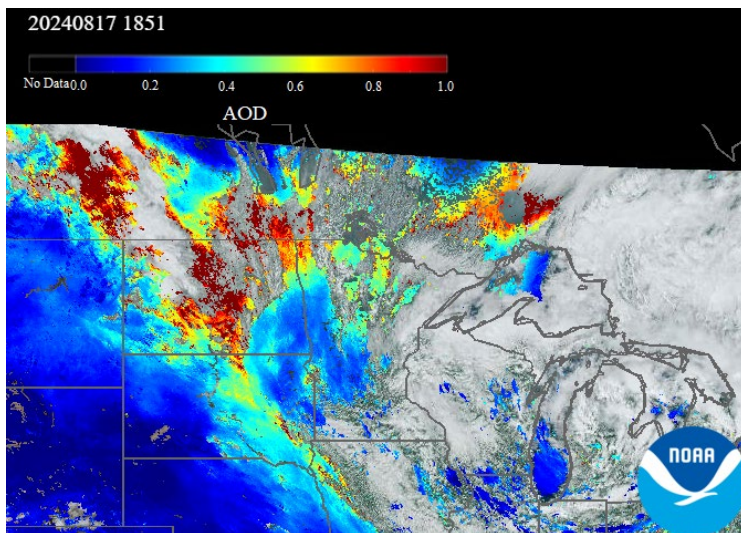
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Detroit Lakes	270052013	8/17/2024	16.01	42.4	Canada Wildfire Smoke
Ely	270750005	8/17/2024	19.51	42.7	Canada Wildfire Smoke
Fargo NW	380171004	8/17/2024	27.92	58	Canada Wildfire Smoke
Grand Portage	270317810	8/17/2024	23.97	50.1	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/17/2024	16.71	31.9	Canada Wildfire Smoke
Red Lake Nation	270072304	8/17/2024	17.94	32.9	Canada Wildfire Smoke
Virginia	271377001	8/17/2024	15.95	30.7	Canada Wildfire Smoke



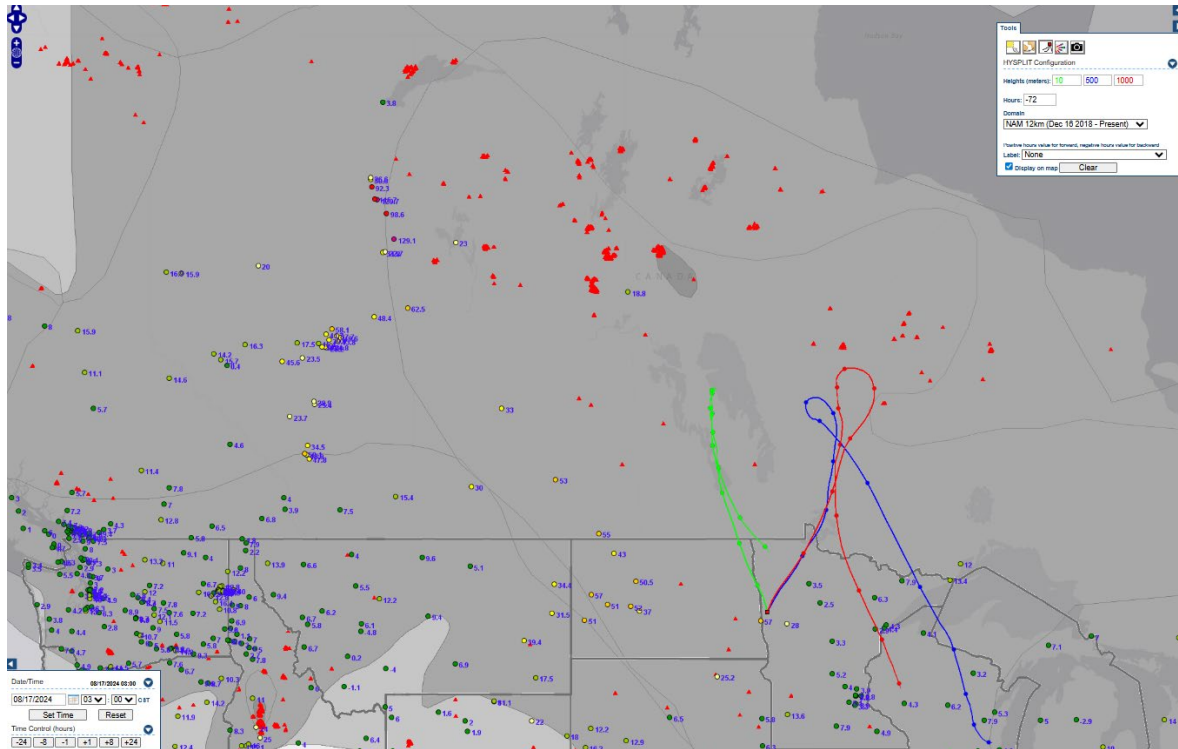
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 17, 2024.



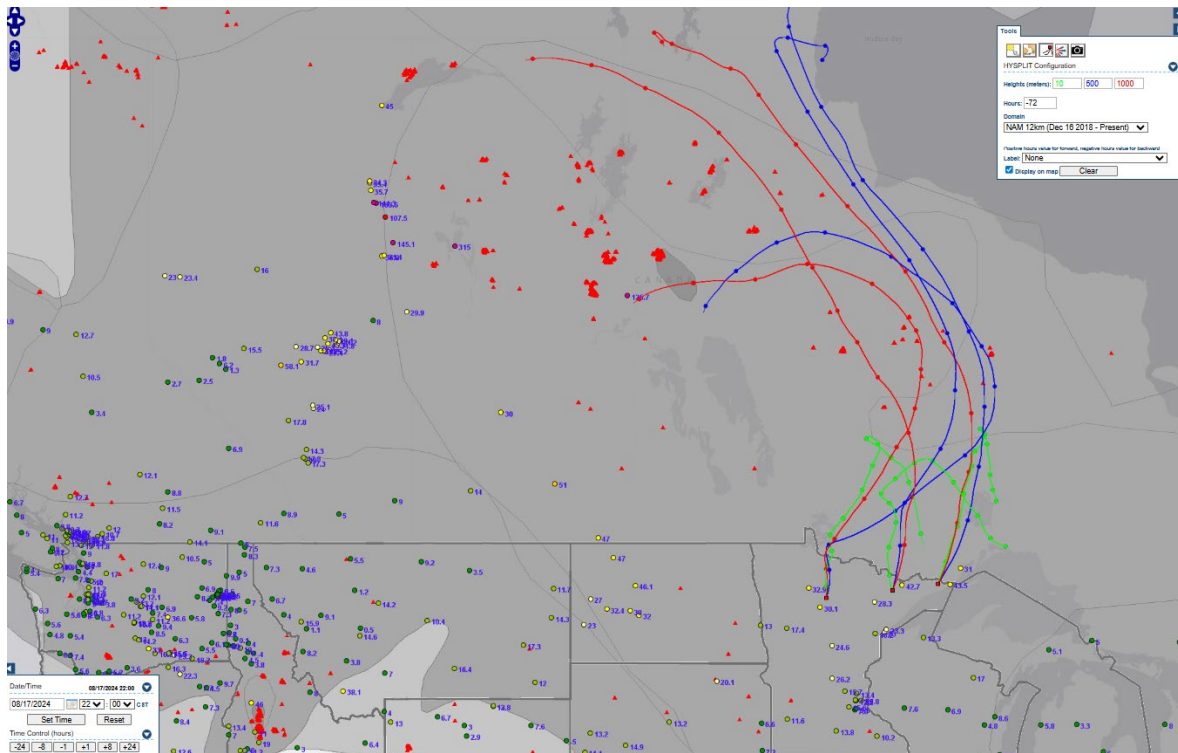
MODIS visible satellite for August 17, 2024.



Aerosol Optical Depth from GOES EAST for August 17, 2024. Source: Aerosol Watch.



Backward trajectories for August 17, 2024 at 3AM.



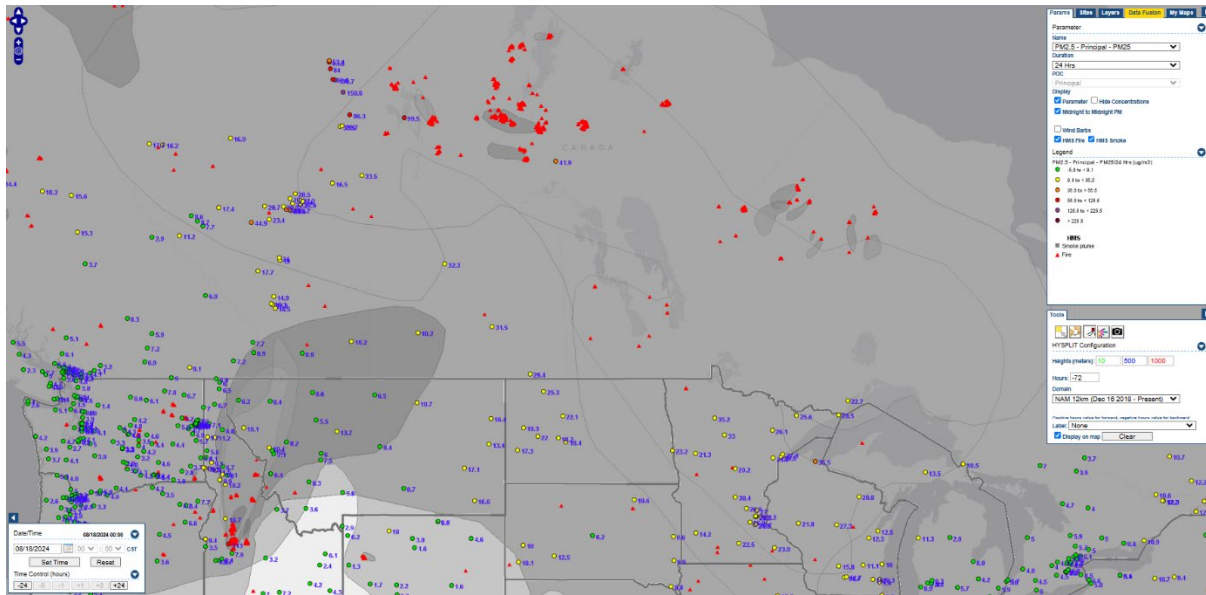
Backward trajectories for August 17, 2024 at 10PM.

8/18/2024 Impacts

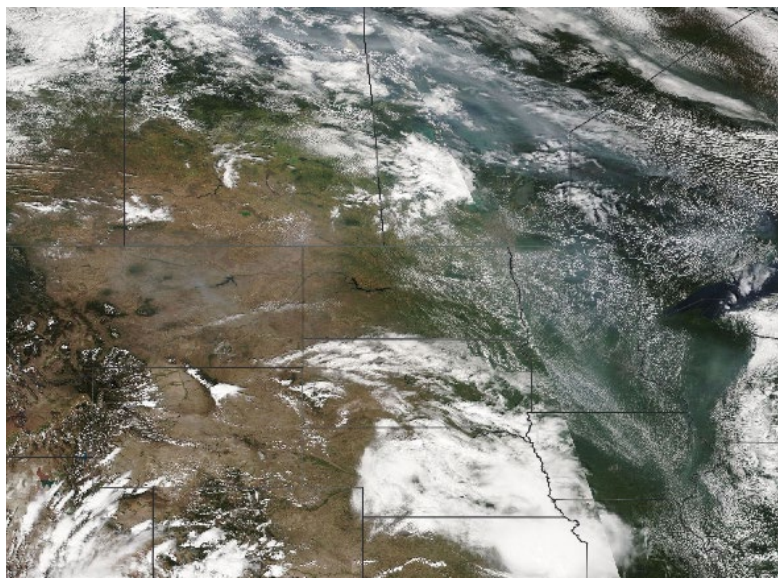
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 18, 2024.

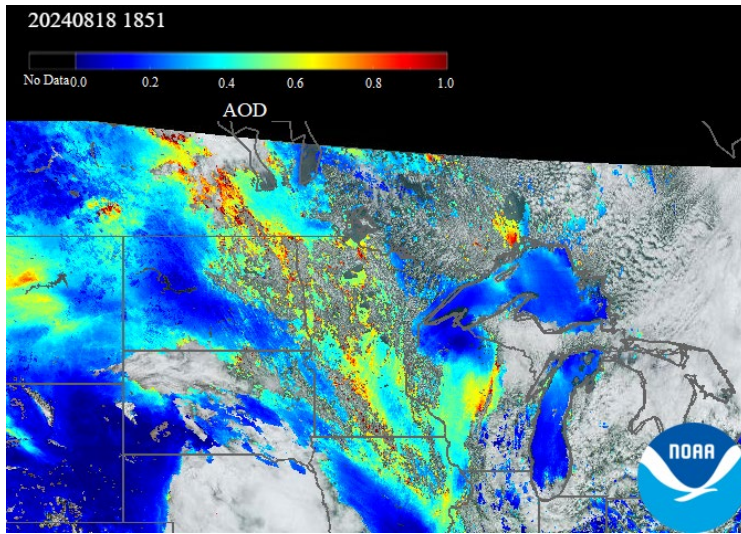
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	8/18/2024	29.77	45.9	Canada Wildfire Smoke
Blaine	270031002	8/18/2024	27	35.3	Canada Wildfire Smoke
Brainerd	270353204	8/18/2024	29.25	35.1	Canada Wildfire Smoke
Detroit Lakes	270052013	8/18/2024	21.33	31.6	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/18/2024	27.98	40.7	Canada Wildfire Smoke
Ely	270750005	8/18/2024	25.69	42.3	Canada Wildfire Smoke
Fargo NW	380171004	8/18/2024	23.29	32	Canada Wildfire Smoke
Fond du Lac	270177417	8/18/2024	24.99	32.4	Canada Wildfire Smoke
Grand Portage	270317810	8/18/2024	28.56	44	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/18/2024	24.81	36.5	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/18/2024	33.02	37.3	Canada Wildfire Smoke
Mankato - Rosa Parks	270135510	8/18/2024	22.58	34	Canada Wildfire Smoke
Minneapolis - Anderson	270530963	8/18/2024	27.35	37.1	Canada Wildfire Smoke
Minneapolis - East Phillips	270531904	8/18/2024	28.38	38.1	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	8/18/2024	27.85	40.6	Canada Wildfire Smoke
Red Lake Nation	270072304	8/18/2024	35.22	42.3	Canada Wildfire Smoke
Rochester	271095008	8/18/2024	23.95	38.9	Canada Wildfire Smoke
Shakopee	271390505	8/18/2024	26.94	40.8	Canada Wildfire Smoke
St. Cloud	271453052	8/18/2024	30.41	36.2	Canada Wildfire Smoke
St. Michael	271713201	8/18/2024	26.98	35.4	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/18/2024	28.24	42.7	Canada Wildfire Smoke
Virginia	271377001	8/18/2024	26.1	38.2	Canada Wildfire Smoke
West Duluth	271377554	8/18/2024	29.9	40.9	Canada Wildfire Smoke



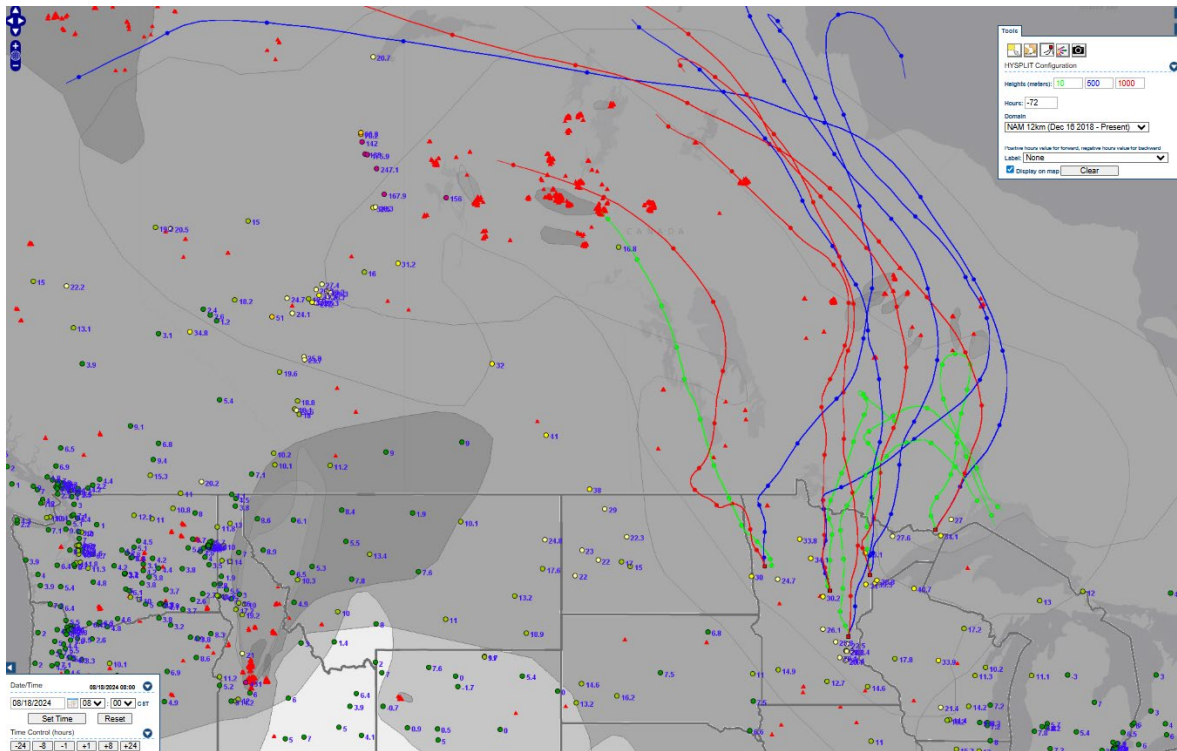
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 18, 2024.



MODIS visible satellite for August 18, 2024.



Aerosol Optical Depth from GOES EAST for August 18, 2024. Source: Aerosol Watch.



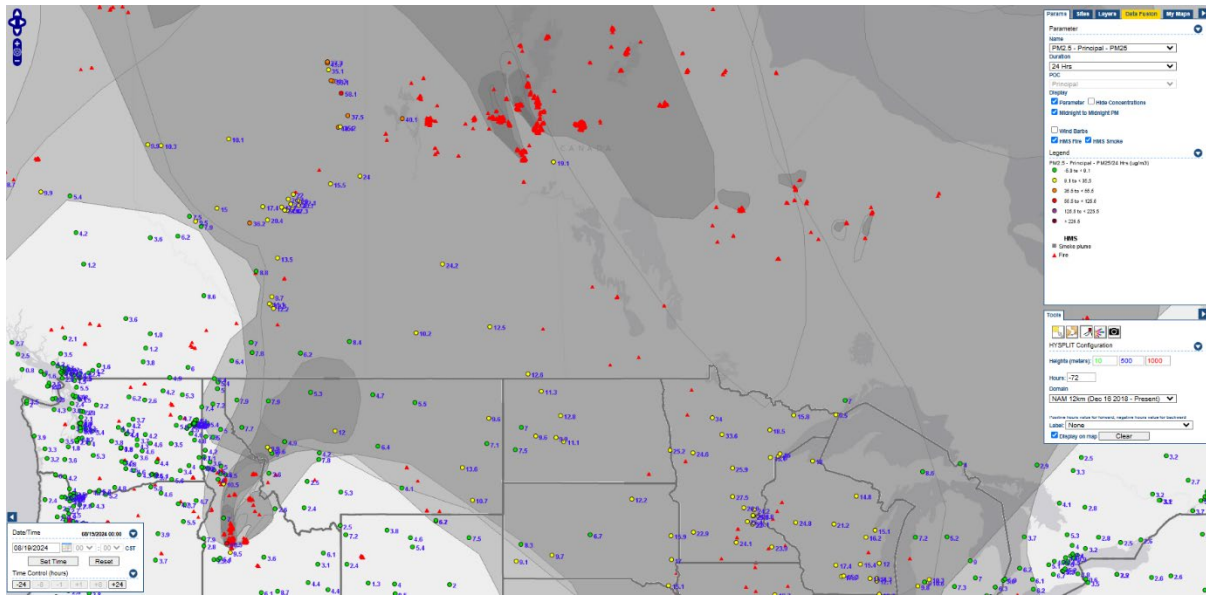
Backward trajectories for August 18, 2024 at 8AM.

8/19/2024 Impacts

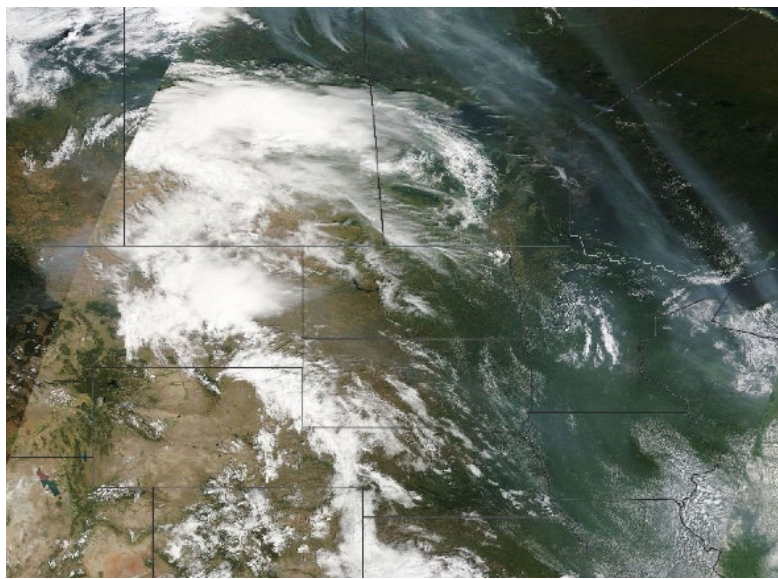
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 19, 2024.

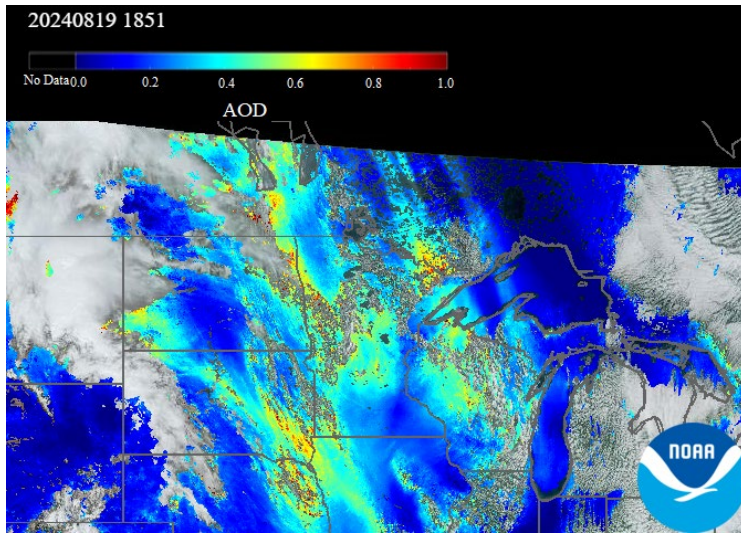
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	8/19/2024	25.15	30.8	Canada Wildfire Smoke
Blaine	270031002	8/19/2024	24.24	29.6	Canada Wildfire Smoke
Brainerd	270353204	8/19/2024	25.99	31.3	Canada Wildfire Smoke
Detroit Lakes	270052013	8/19/2024	24.68	32.2	Canada Wildfire Smoke
Duluth-WDSE	271377550	8/19/2024	16.1	25.3	Canada Wildfire Smoke
Ely	270750005	8/19/2024	15.89	27.4	Canada Wildfire Smoke
Fargo NW	380171004	8/19/2024	25.23	30	Canada Wildfire Smoke
Fond du Lac	270177417	8/19/2024	15.1	21	Canada Wildfire Smoke
Grand Portage	270317810	8/19/2024	9.58	22.8	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/19/2024	22.08	26.4	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/19/2024	33.7	38	Canada Wildfire Smoke
Mankato - Rosa Parks	270135510	8/19/2024	24.16	32	Canada Wildfire Smoke
Marshall	270834210	8/19/2024	22.9	29.6	Canada Wildfire Smoke
Minneapolis - Anderson	270530963	8/19/2024	25.08	28.4	Canada Wildfire Smoke
Minneapolis - East Phillips	270531904	8/19/2024	25.82	32.9	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	8/19/2024	24.63	30.9	Canada Wildfire Smoke
Red Lake Nation	270072304	8/19/2024	34.05	38	Canada Wildfire Smoke
Rochester	271095008	8/19/2024	23.99	32.9	Canada Wildfire Smoke
Shakopee	271390505	8/19/2024	26.49	35.3	Canada Wildfire Smoke
St. Cloud	271453052	8/19/2024	27.5	32.9	Canada Wildfire Smoke
St. Michael	271713201	8/19/2024	26.94	32.4	Canada Wildfire Smoke
St. Paul-Harding	271230871	8/19/2024	25.87	44.3	Canada Wildfire Smoke
Virginia	271377001	8/19/2024	18.58	28.6	Canada Wildfire Smoke
West Duluth	271377554	8/19/2024	17.01	29.6	Canada Wildfire Smoke



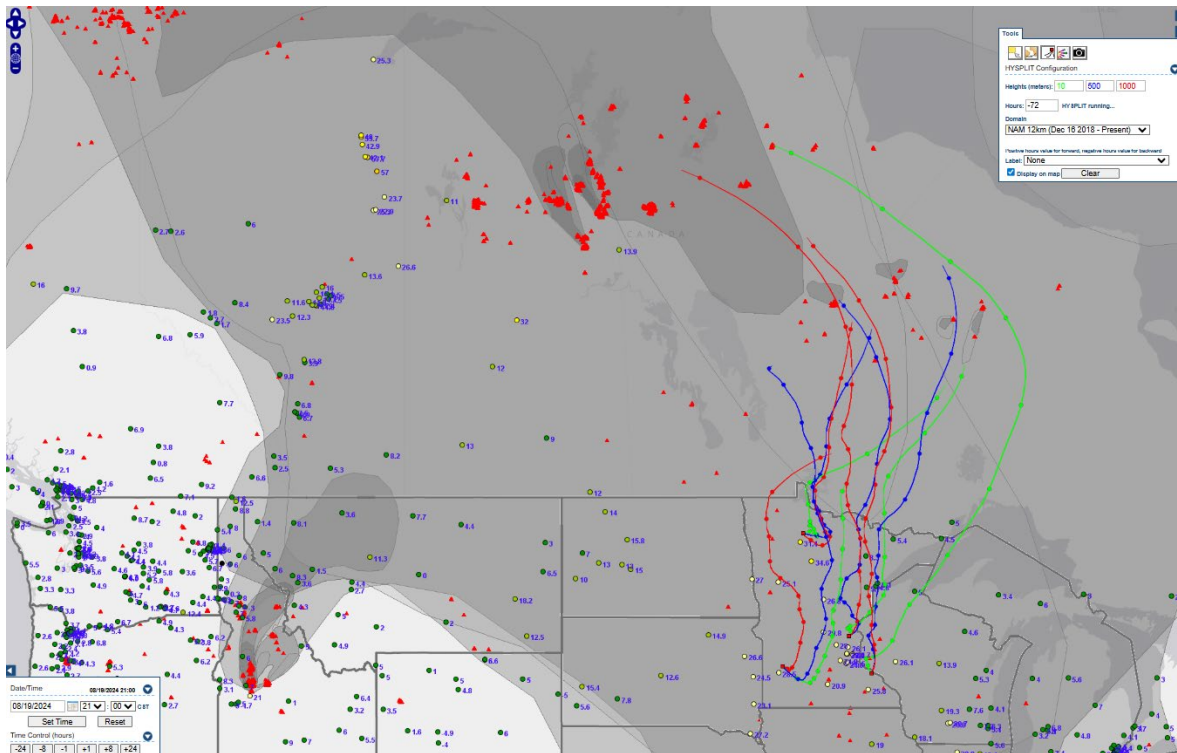
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 19, 2024.



MODIS visible satellite for August 19, 2024.



Aerosol Optical Depth from GOES EAST for August 19, 2024. Source: Aerosol Watch.



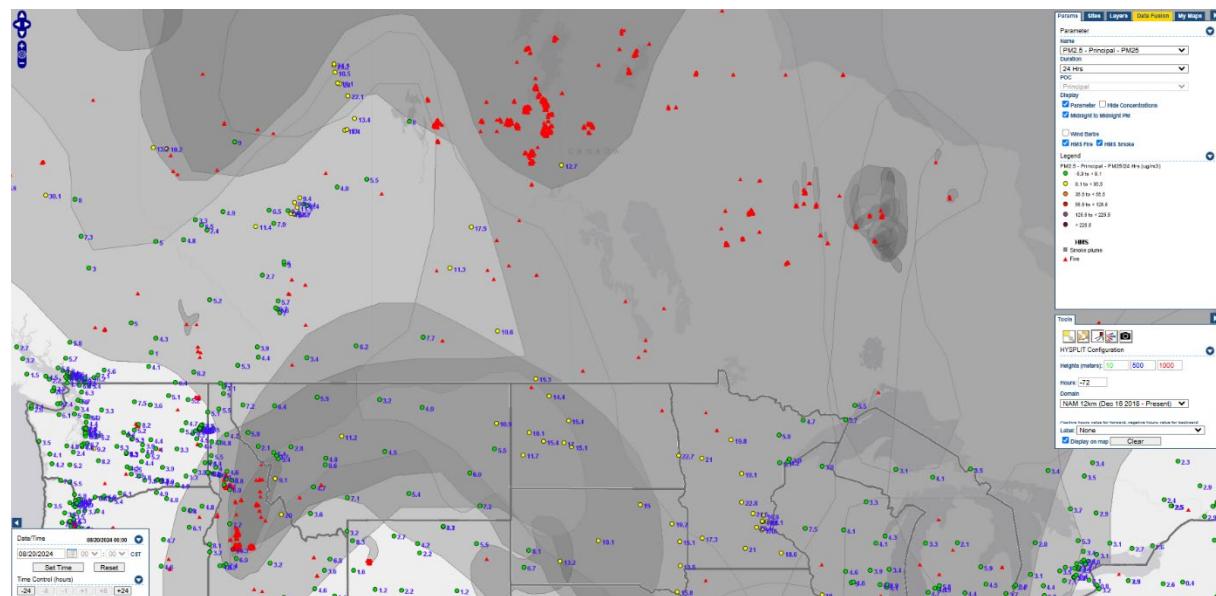
Backward trajectories for August 19, 2024.

8/20/2024 Impacts

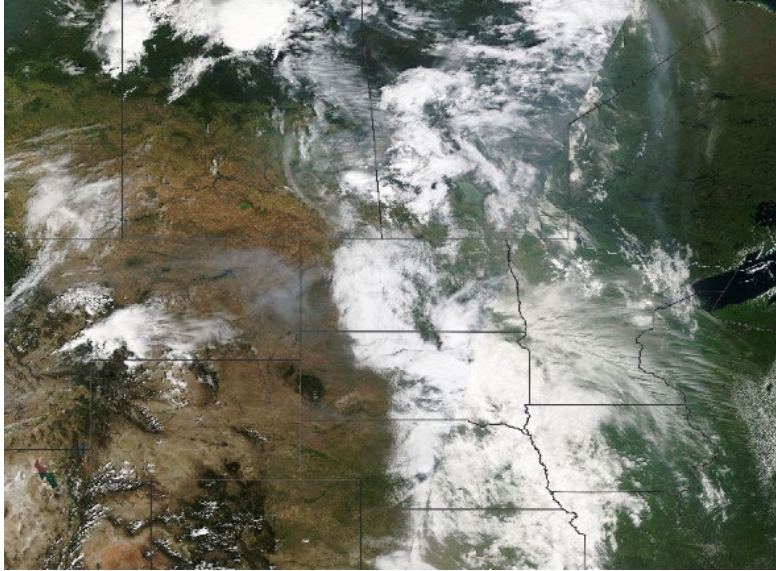
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 20, 2024.

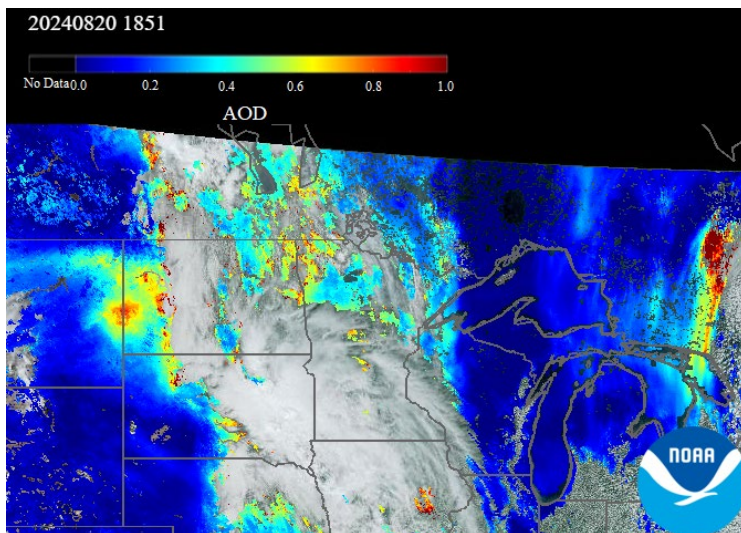
Site	Site AQS	Date (LST)	Daily average (µg/m3)	Max hour (µg/m3)	Notes
Apple Valley	270370470	8/20/2024	21.02	26.2	Canada Wildfire Smoke
Blaine	270031002	8/20/2024	16.63	27	Canada Wildfire Smoke
Brainerd	270353204	8/20/2024	19.2	25.7	Canada Wildfire Smoke
Detroit Lakes	270052013	8/20/2024	21.03	26.2	Canada Wildfire Smoke
Fargo NW	380171004	8/20/2024	22.75	27	Canada Wildfire Smoke
Lakeville - Near Road	270370480	8/20/2024	17.63	22.7	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/20/2024	19.85	26.7	Canada Wildfire Smoke
Mankato - RosaP	270135510	8/20/2024	21.1	25.5	Canada Wildfire Smoke
Marshall	270834210	8/20/2024	17.37	22.2	Canada Wildfire Smoke
Minneapolis - Anderson	270530963	8/20/2024	18.89	27.3	Canada Wildfire Smoke
Minneapolis - East Phillips	270531904	8/20/2024	19.51	30.1	Canada Wildfire Smoke
Minneapolis - Near Road	270530962	8/20/2024	17.83	27.7	Canada Wildfire Smoke
Red Lake Nation	270072304	8/20/2024	24.83	30.6	Canada Wildfire Smoke
Rochester	271095008	8/20/2024	18.65	25.2	Canada Wildfire Smoke
Shakopee	271390505	8/20/2024	20.49	24.4	Canada Wildfire Smoke
St. Cloud	271453052	8/20/2024	22.86	27.5	Canada Wildfire Smoke
St. Michael	271713201	8/20/2024	21.5	25.7	Canada Wildfire Smoke



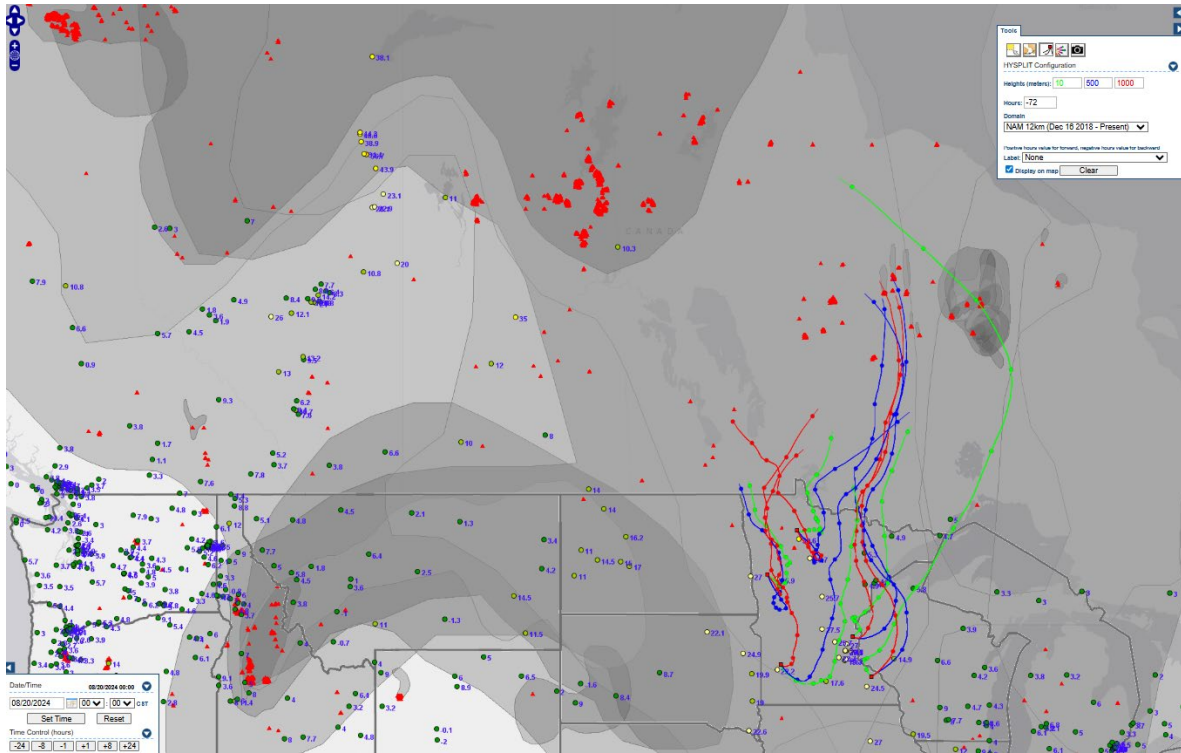
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 20, 2024.



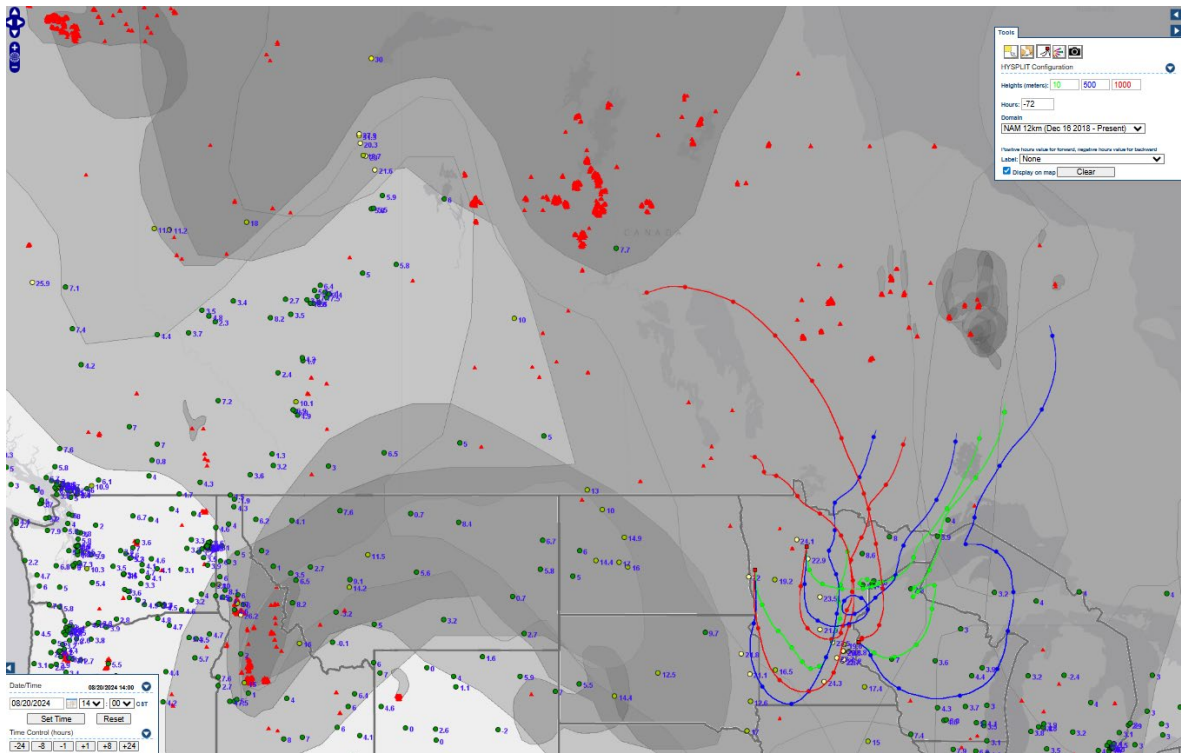
MODIS visible satellite for August 20, 2024.



Aerosol Optical Depth from GOES EAST for August 20, 2024. Source: Aerosol Watch.



Backward trajectories for August 20, 2024 at midnight.



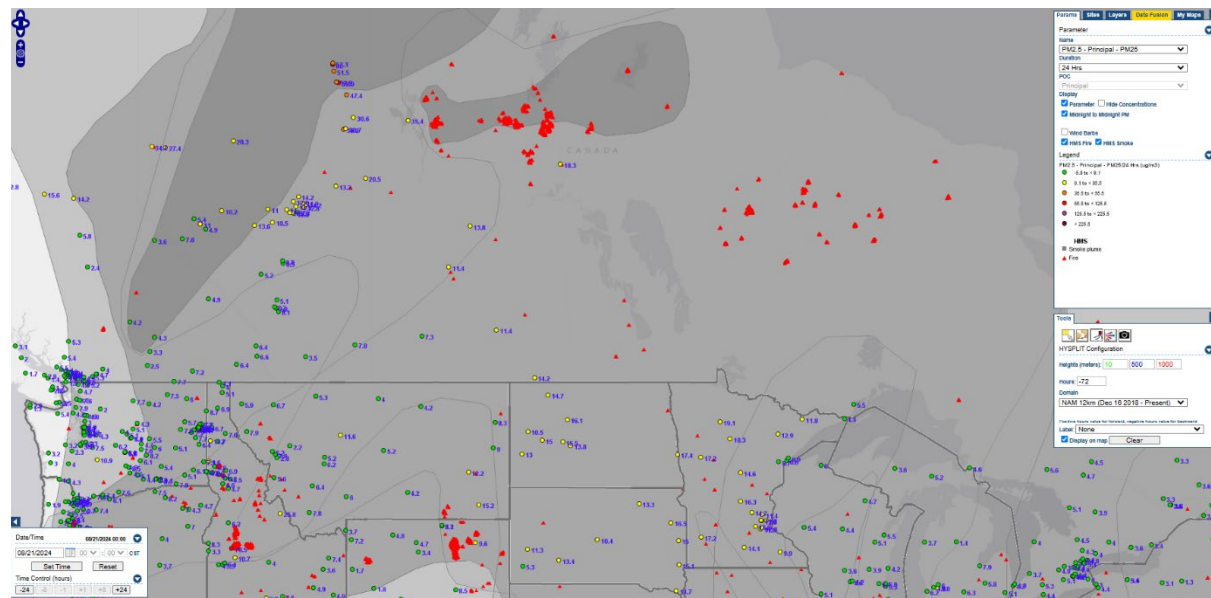
Backward trajectories for August 20, 2024 at 2PM.

8/21/2024 Impacts

Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on August 21, 2024.

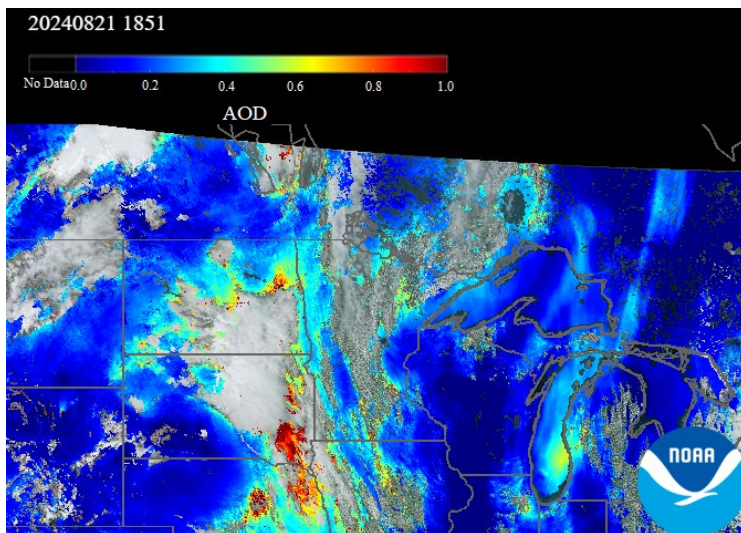
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Detroit Lakes	270052013	8/21/2024	17.29	20.8	Canada Wildfire Smoke
Leech Lake Nation	270213410	8/21/2024	18.32	22	Canada Wildfire Smoke
Red Lake Nation	270072304	8/21/2024	19.16	20.4	Canada Wildfire Smoke



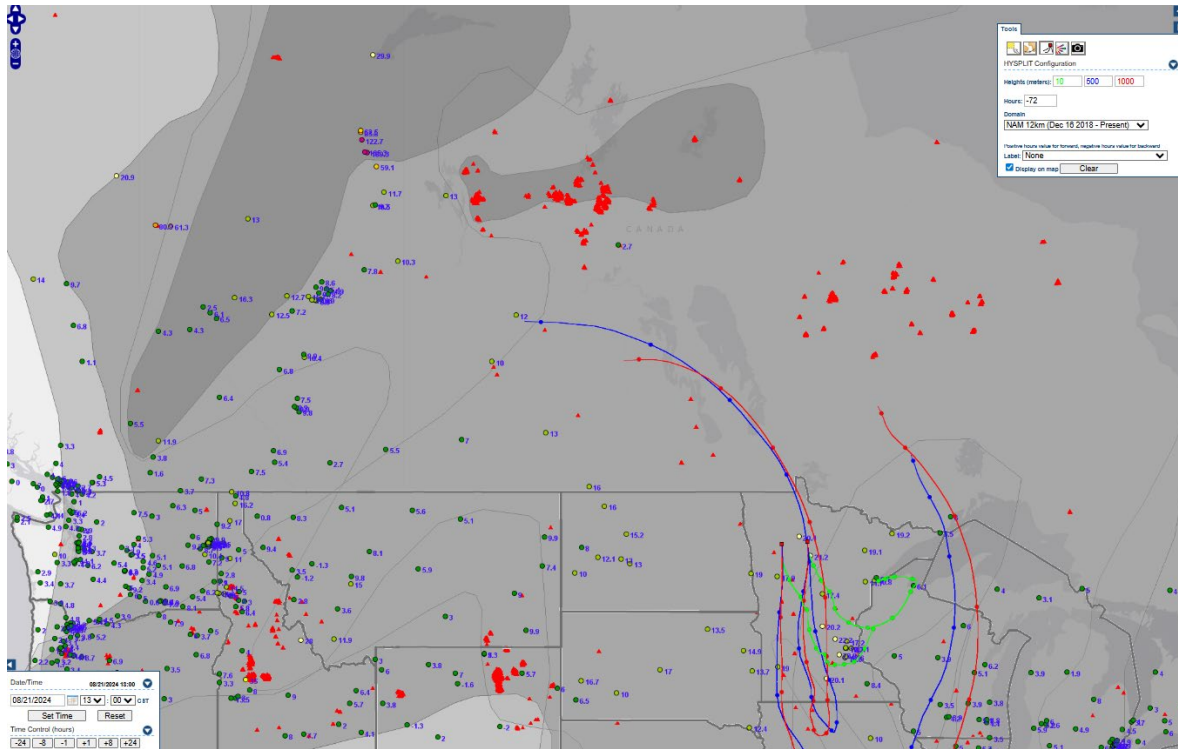
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on August 21, 2024.



MODIS visible satellite for August 21, 2024.



Aerosol Optical Depth from GOES EAST for August 21, 2024. Source: Aerosol Watch.



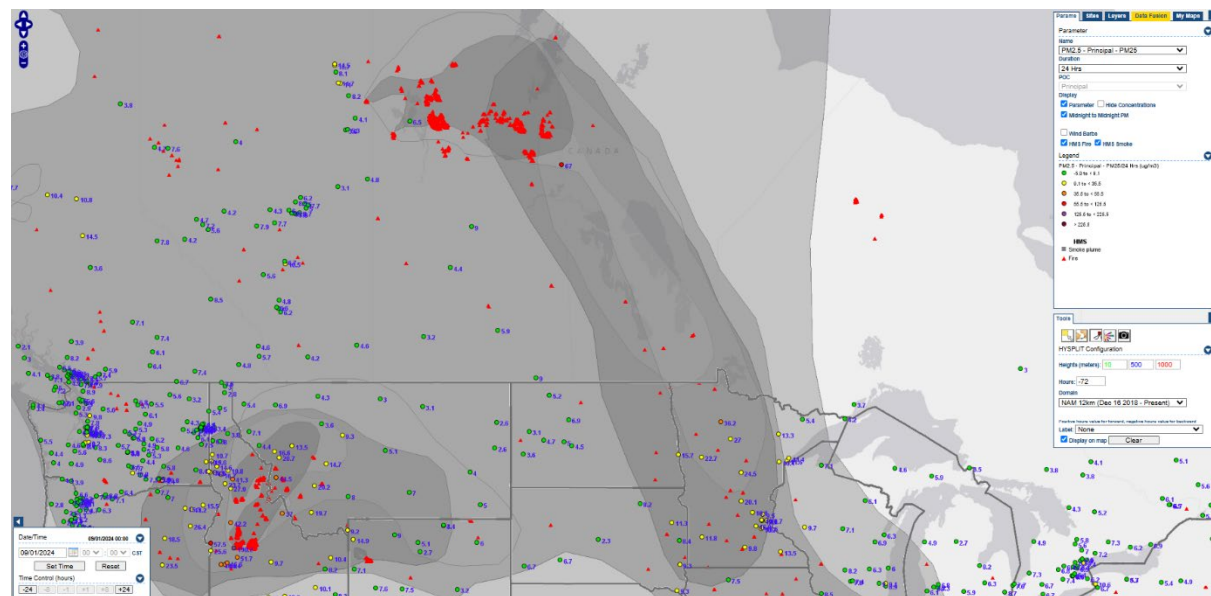
Backward trajectories for August 21, 2024.

9/1/2024 Impacts

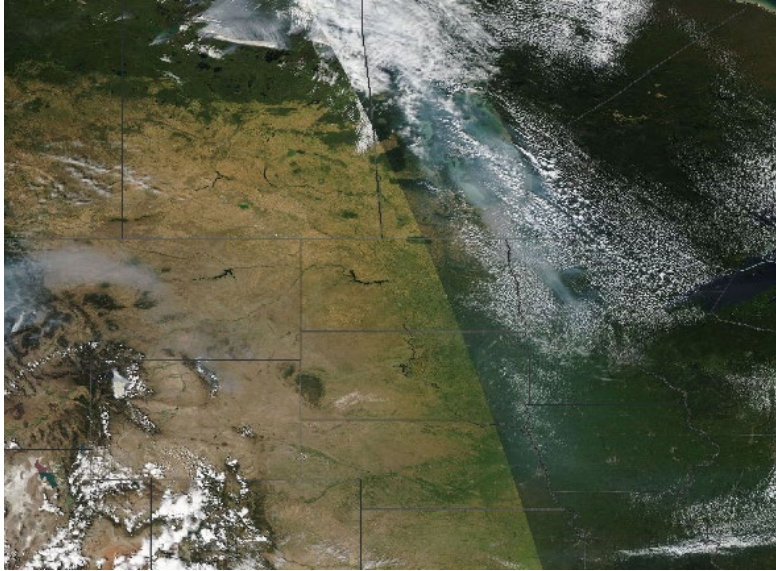
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 1, 2024.

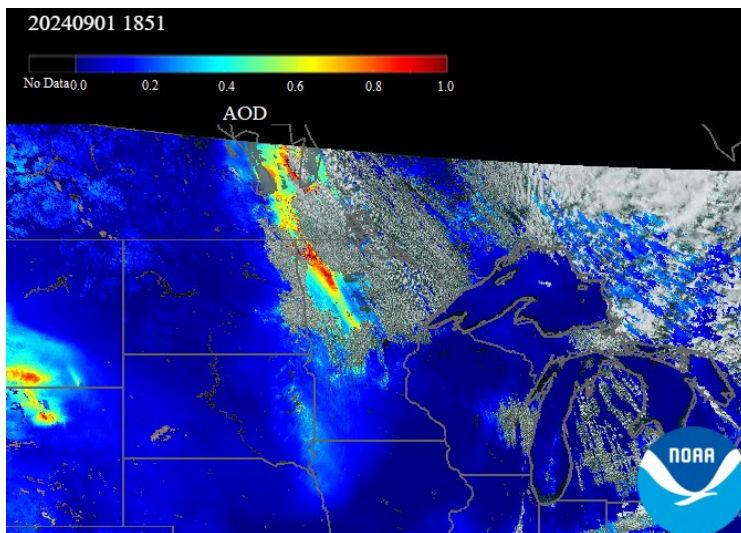
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Brainerd	270353204	9/1/2024	24.53	42.9	Canada Wildfire Smoke
Detroit Lakes	270052013	9/1/2024	22.77	30	Canada Wildfire Smoke
Leech Lake Nation	270213410	9/1/2024	27.08	50.8	Canada Wildfire Smoke
Red Lake Nation	270072304	9/1/2024	36.28	64.1	Canada Wildfire Smoke
St. Cloud	271453052	9/1/2024	20.13	49.4	Canada Wildfire Smoke



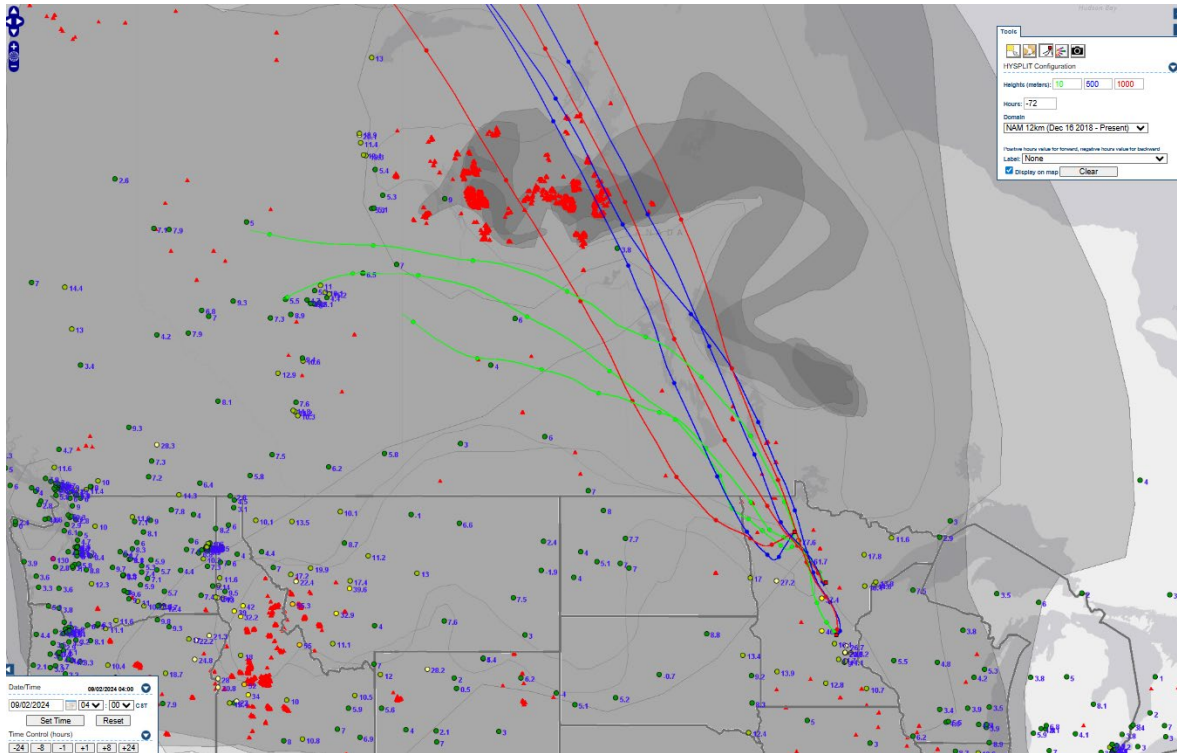
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 1, 2024.



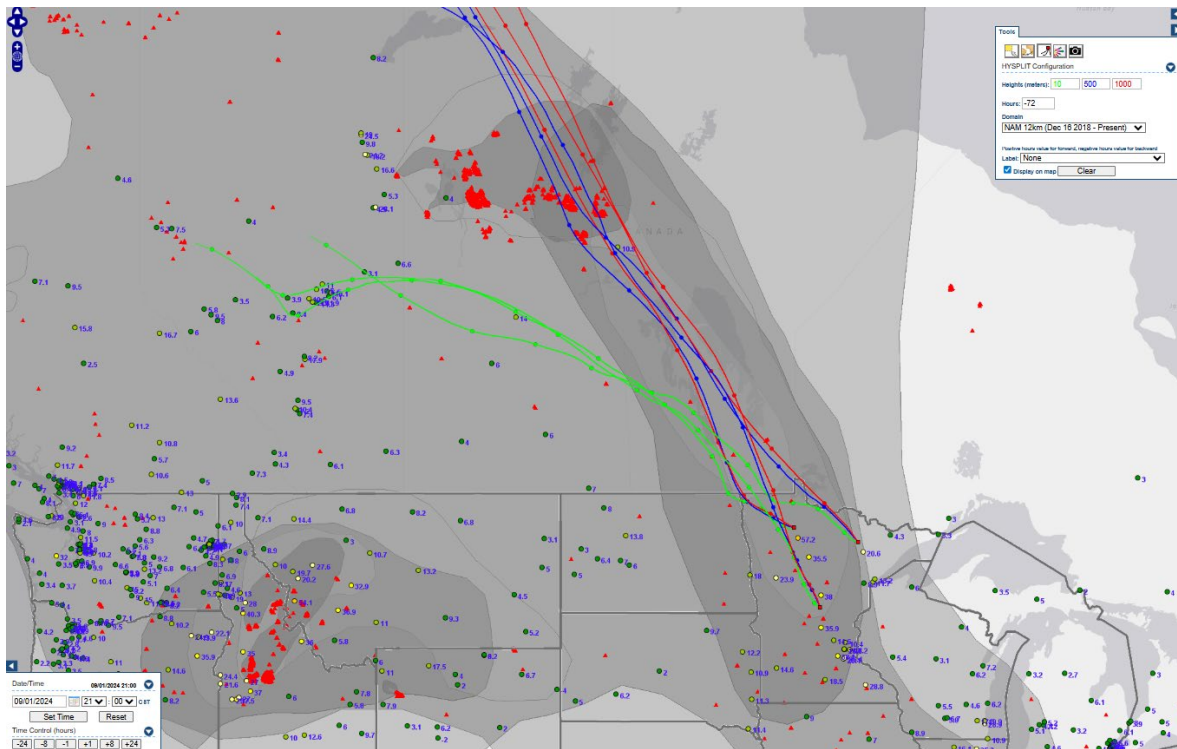
MODIS visible satellite for September 1, 2024.



Aerosol Optical Depth from GOES EAST for September 1, 2024. Source: Aerosol Watch.



Backward trajectories for September 1, 2024 at 4AM.



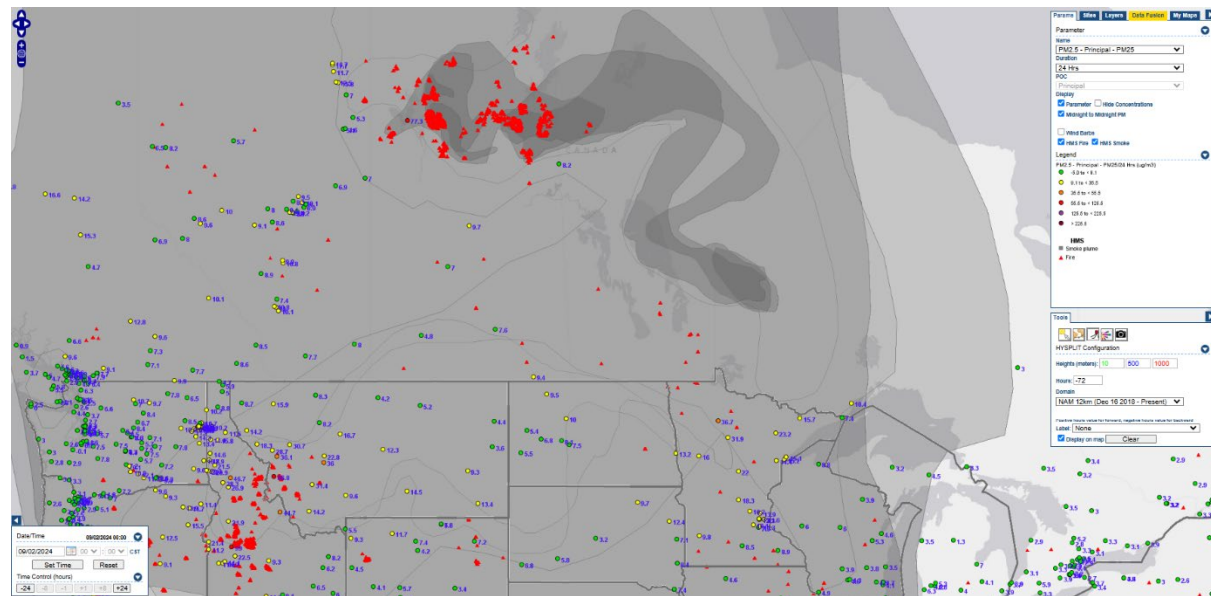
Backward trajectories for September 1, 2024 at 9PM.

9/2/2024 Impacts

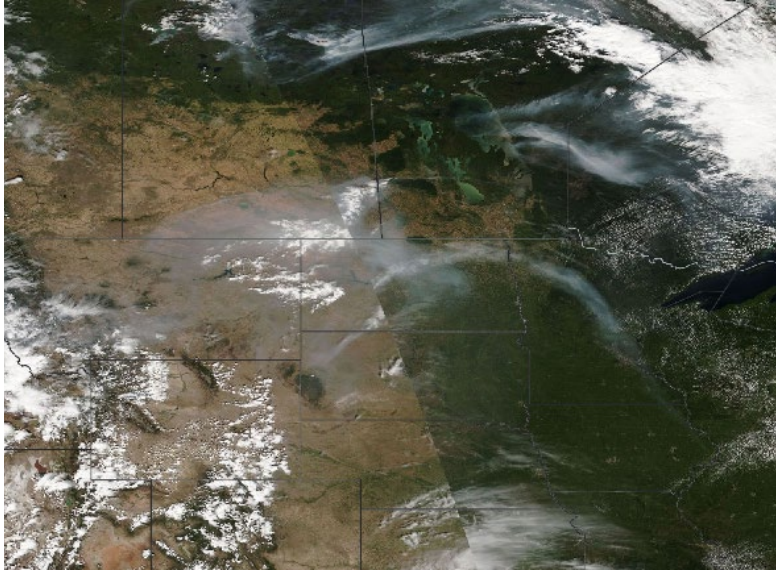
Smoke impacts from wildfires located in Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 2, 2024.

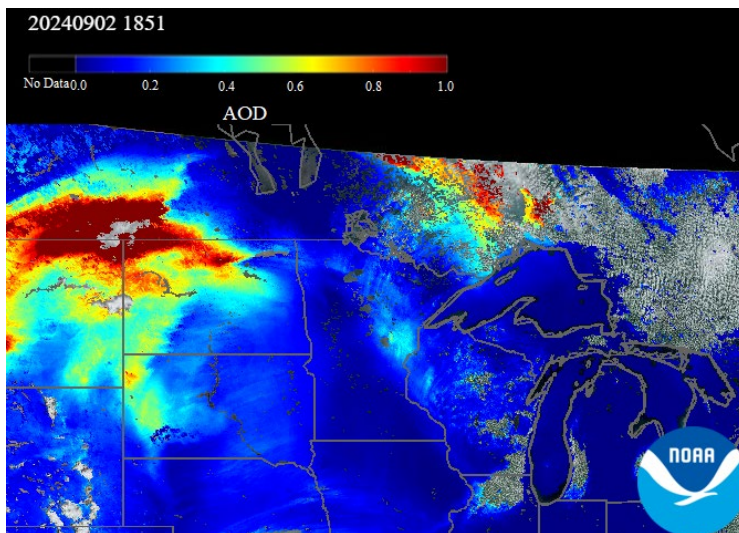
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Brainerd	270353204	9/2/2024	22.02	46.5	Canada Wildfire Smoke
Detroit Lakes	270052013	9/2/2024	16.04	27.2	Canada Wildfire Smoke
Duluth-WDSE	271377550	9/2/2024	15.13	24.6	Canada Wildfire Smoke
Ely	270750005	9/2/2024	15.77	22.6	Canada Wildfire Smoke
Fond du Lac	270177417	9/2/2024	14.49	27.2	Canada Wildfire Smoke
Leech Lake Nation	270213410	9/2/2024	31.94	65.1	Canada Wildfire Smoke
Red Lake Nation	270072304	9/2/2024	36.71	85.1	Canada Wildfire Smoke
St. Cloud	271453052	9/2/2024	18.39	47.6	Canada Wildfire Smoke
Virginia	271377001	9/2/2024	23.23	37.9	Canada Wildfire Smoke
West Duluth	271377554	9/2/2024	15.2	24.4	Canada Wildfire Smoke



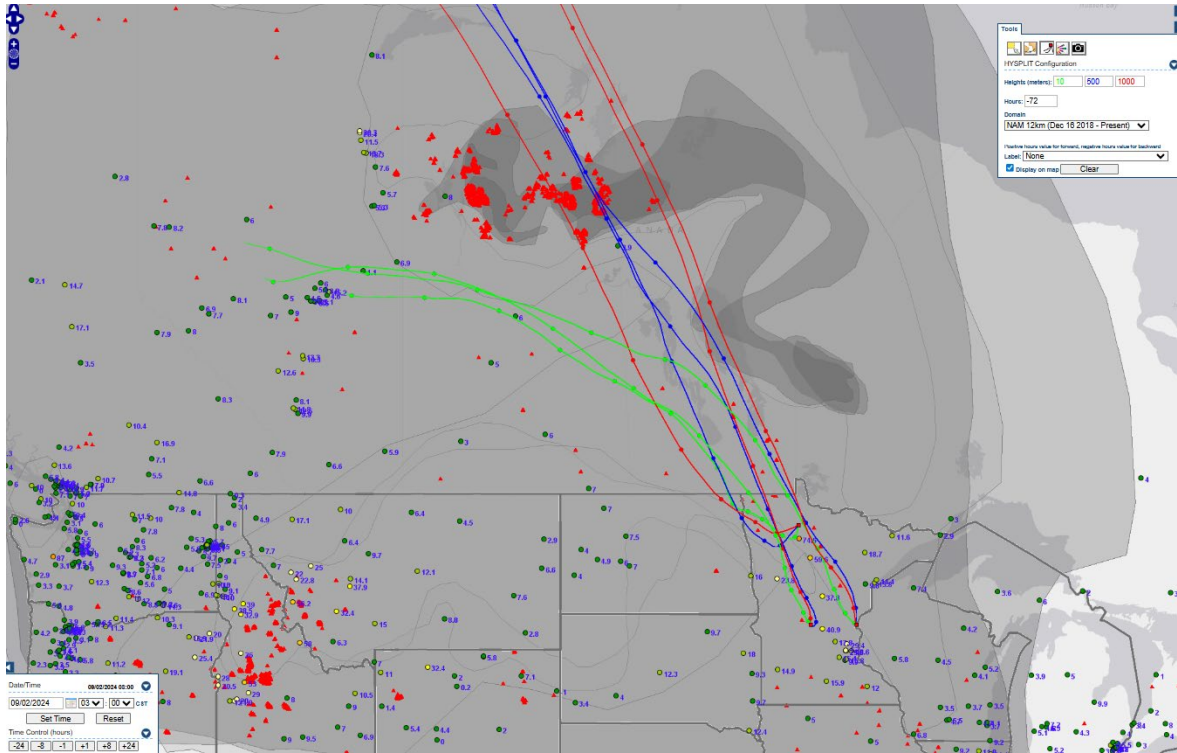
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 2, 2024.



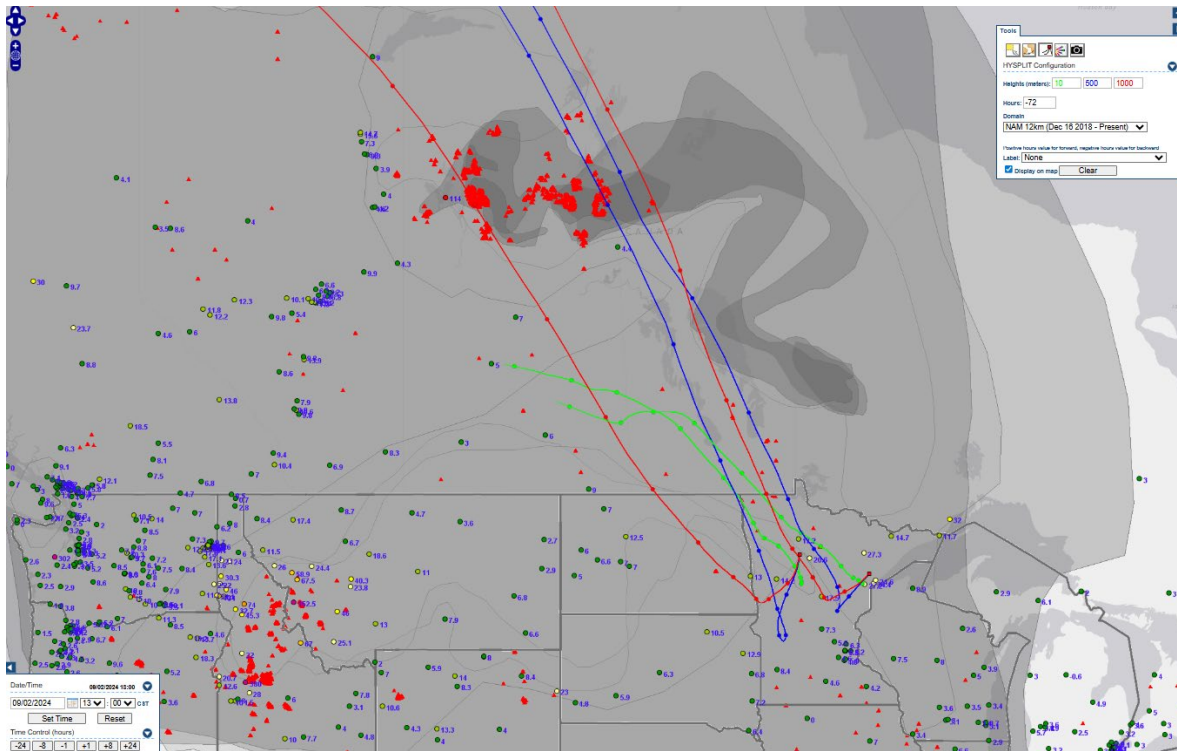
MODIS visible satellite for September 2, 2024.



Aerosol Optical Depth from GOES EAST for September 2, 2024. Source: Aerosol Watch.



Backward trajectories for September 2, 2024 at 3AM.



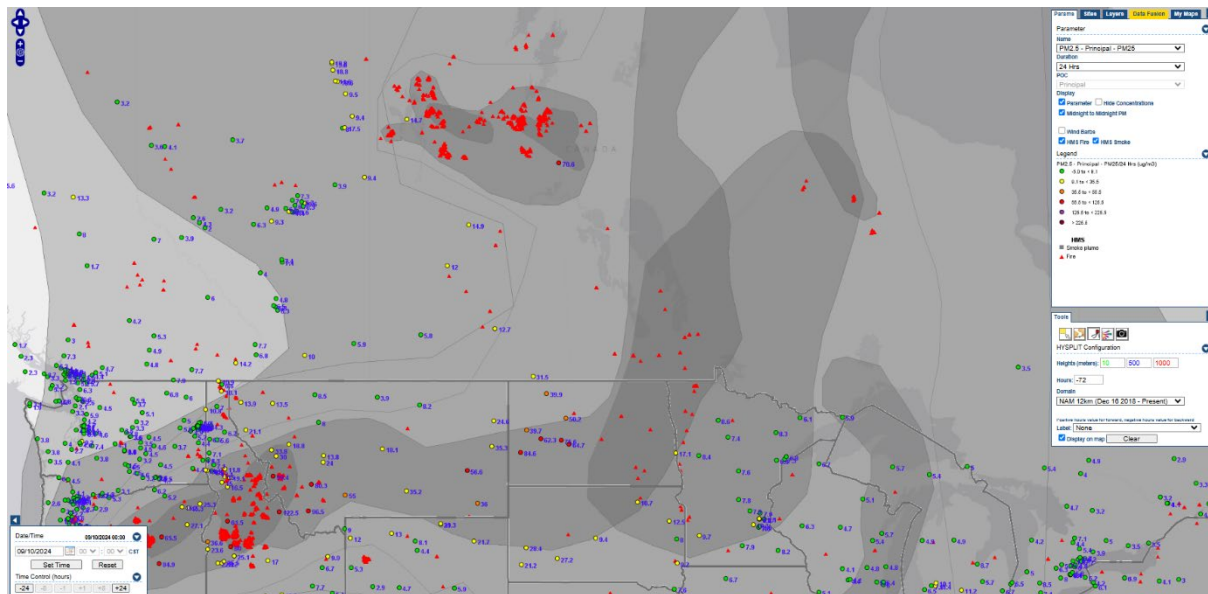
Backward trajectories for September 2, 2024 at 1PM.

9/10/2024 Impacts

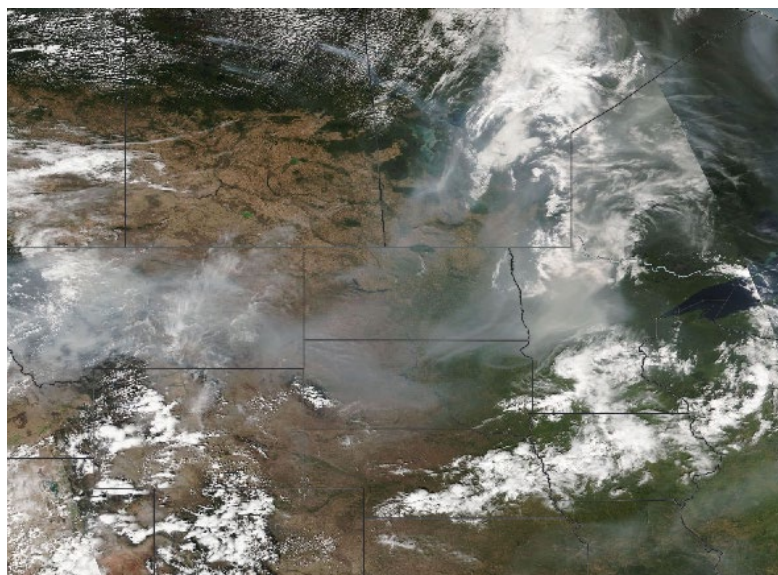
Smoke impacts from wildfires located in the Northwest United States and Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 10, 2024.

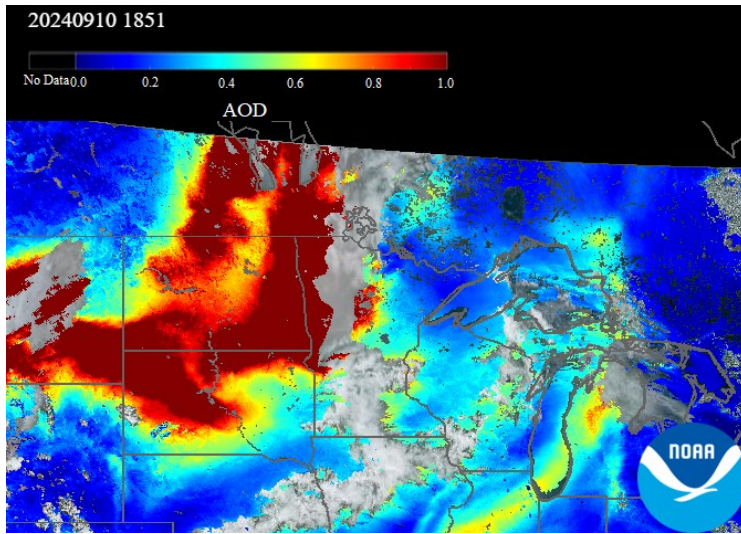
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Fargo NW	380171004	9/10/2024	17.13	57	US+Canada Wildfire Smoke



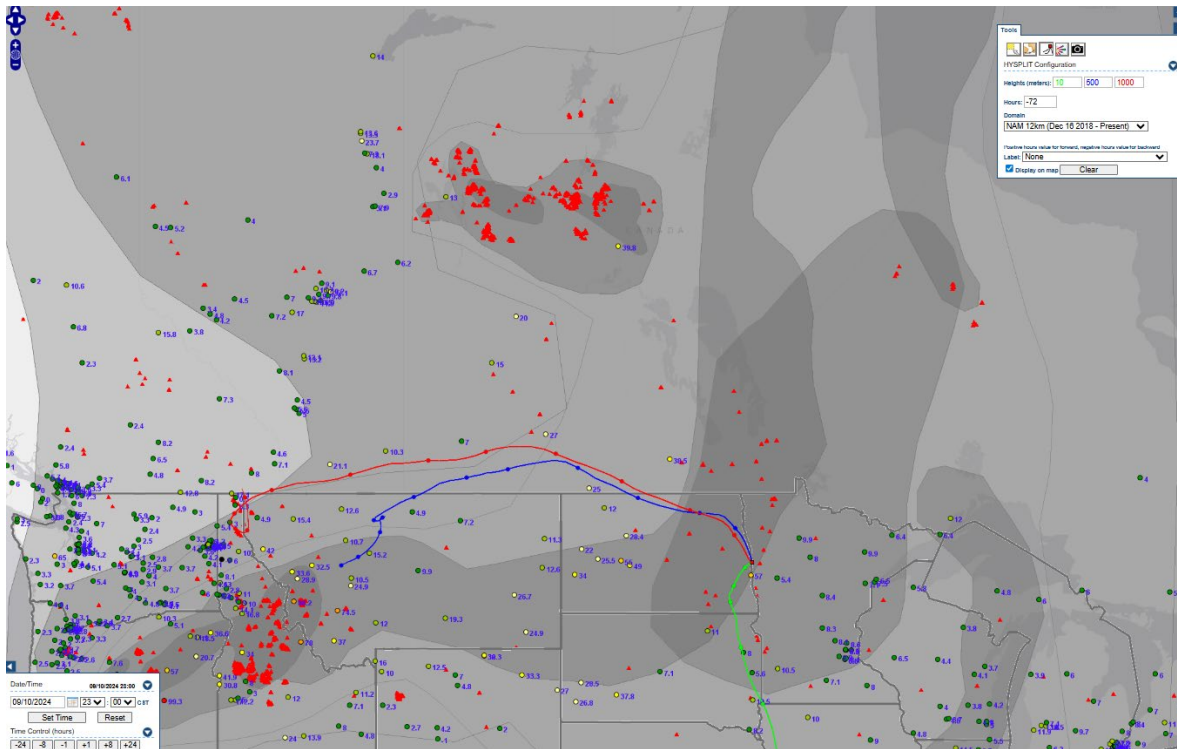
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 10, 2024.



MODIS visible satellite for September 10, 2024.



Aerosol Optical Depth from GOES EAST for September 10, 2024. Source: Aerosol Watch.



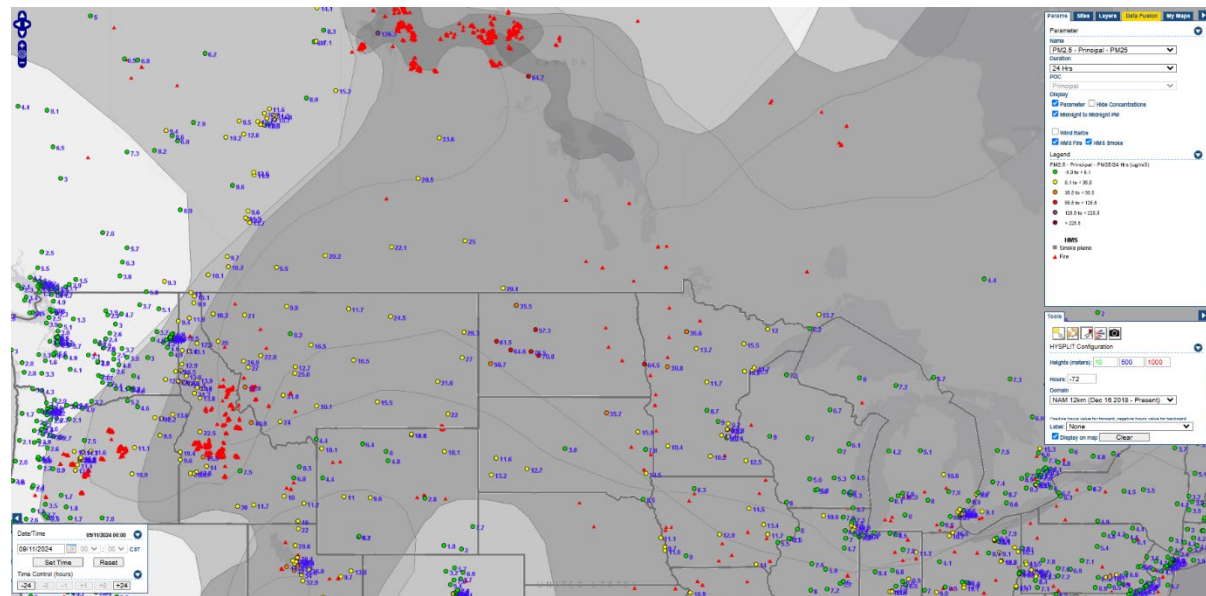
Backward trajectories for September 10, 2024.

9/11/2024 Impacts

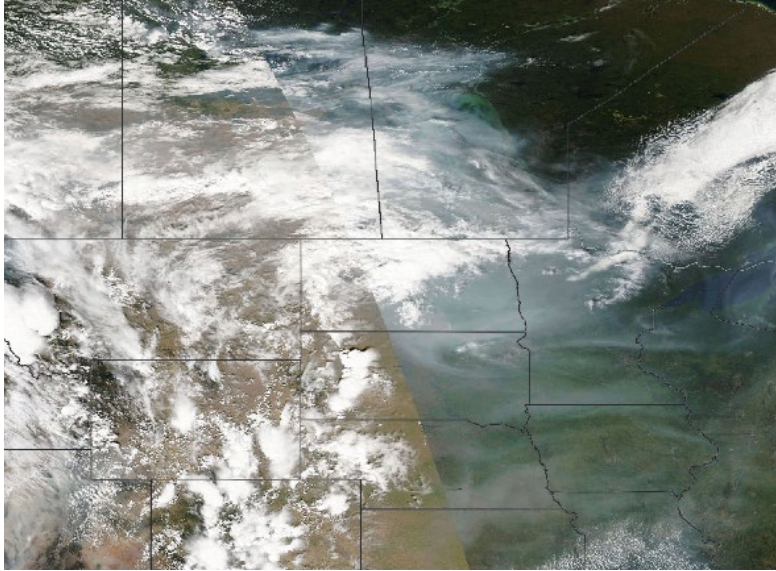
Smoke impacts from wildfires located in the Northwest United States and Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 11, 2024.

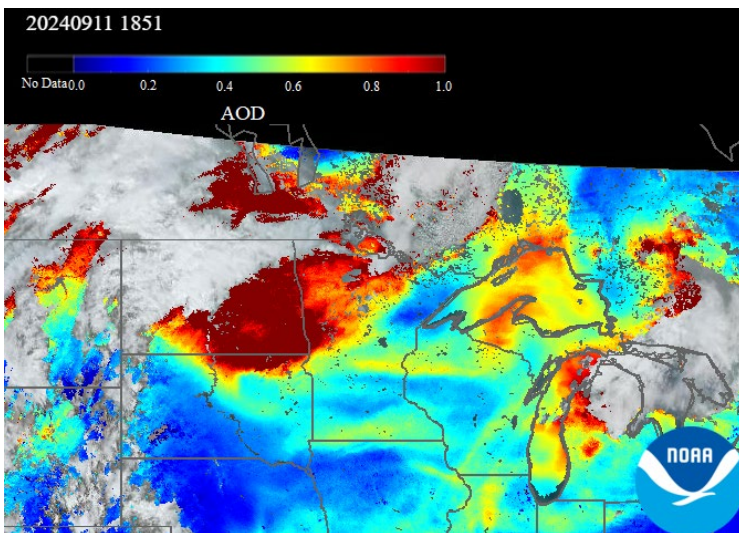
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Detroit Lakes	270052013	9/11/2024	39.87	86.6	US+Canada Wildfire Smoke
Fargo NW	380171004	9/11/2024	64.5	126	US+Canada Wildfire Smoke
Red Lake Nation	270072304	9/11/2024	36.64	59.6	US+Canada Wildfire Smoke



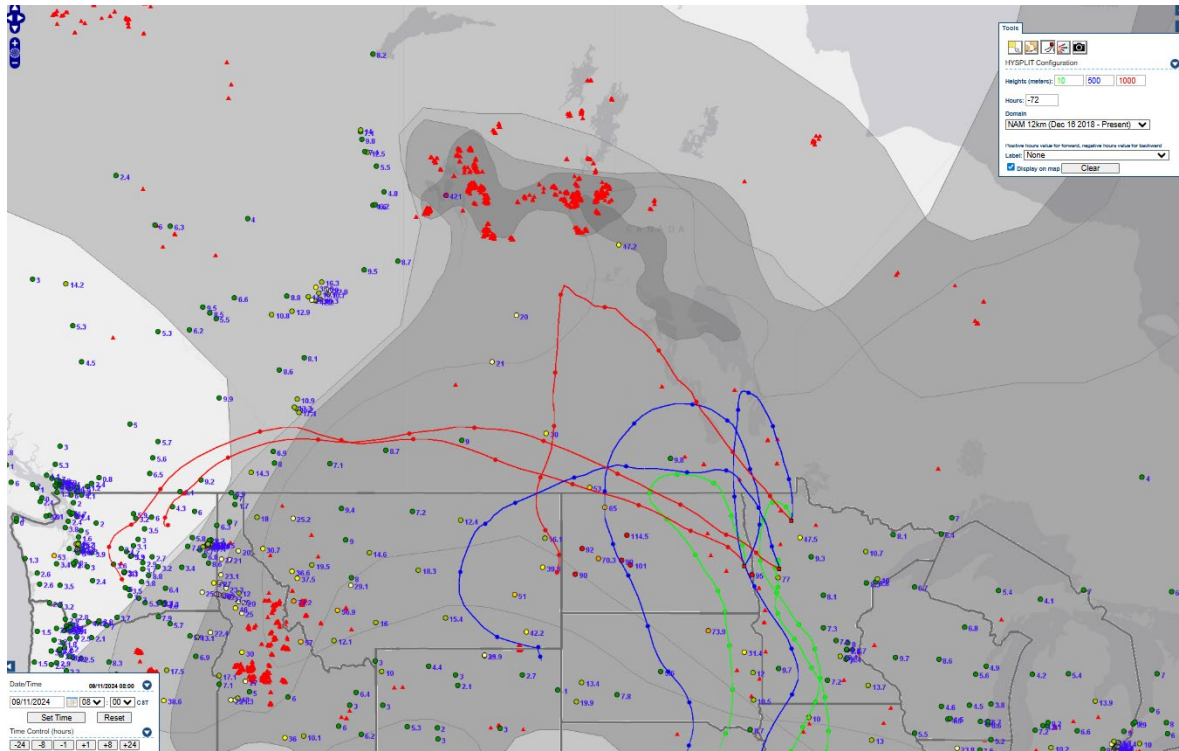
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 11, 2024.



MODIS visible satellite for September 11, 2024.



Aerosol Optical Depth from GOES EAST for September 11, 2024. Source: Aerosol Watch.



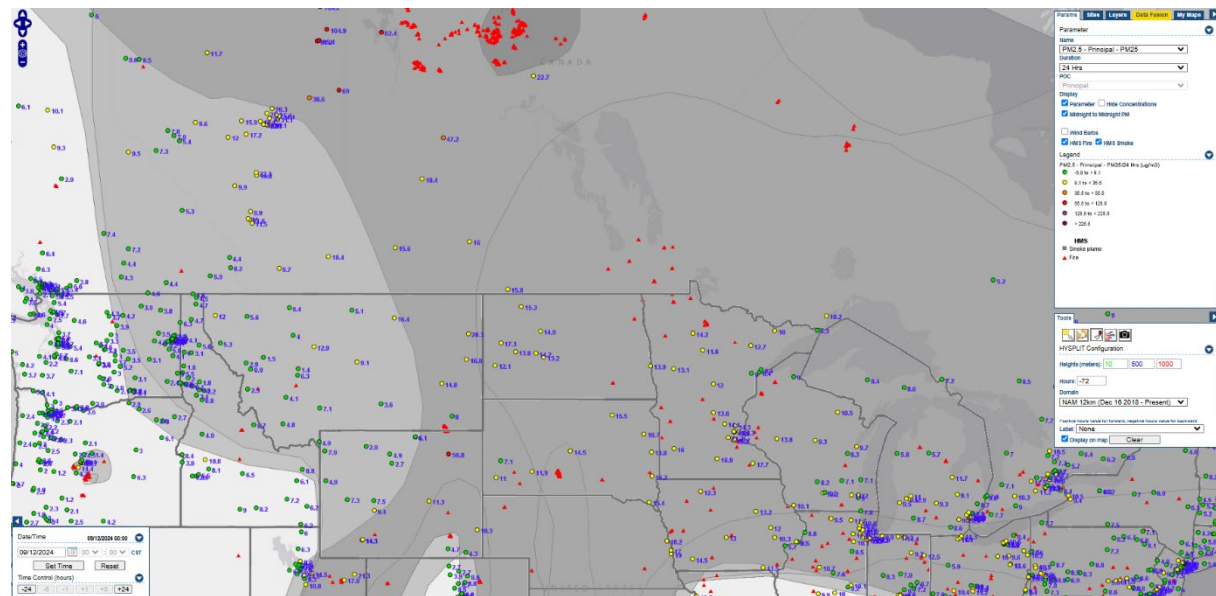
Backward trajectories for September 11, 2024.

9/12/2024 Impacts

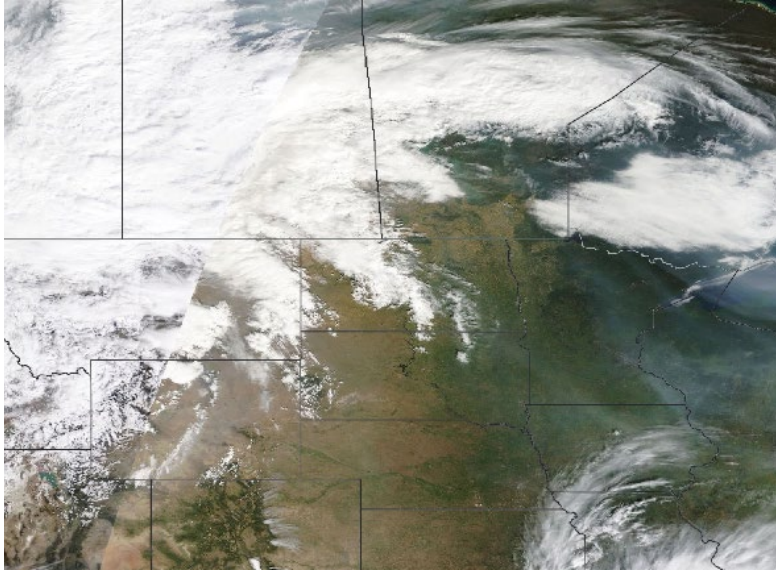
Smoke impacts from wildfires located in the Northwest United States and Canada.

Monitored 24-hour PM_{2.5} concentrations impacted by smoke on September 12, 2024.

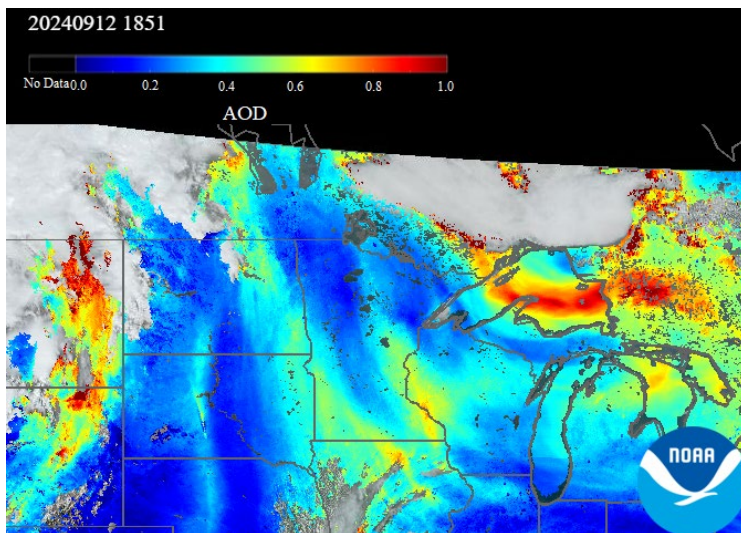
Site	Site AQS	Date (LST)	Daily average (µg/m ³)	Max hour (µg/m ³)	Notes
Apple Valley	270370470	9/12/2024	18.78	25.5	US+Canada Wildfire Smoke
Mankato - Rosa Park	270135510	9/12/2024	16.97	22.1	US+Canada Wildfire Smoke
Marshall	270834210	9/12/2024	16.05	23	US+Canada Wildfire Smoke
Rochester	271095008	9/12/2024	17.77	21.7	US+Canada Wildfire Smoke
Shakopee	271390505	9/12/2024	21.27	29.4	US+Canada Wildfire Smoke



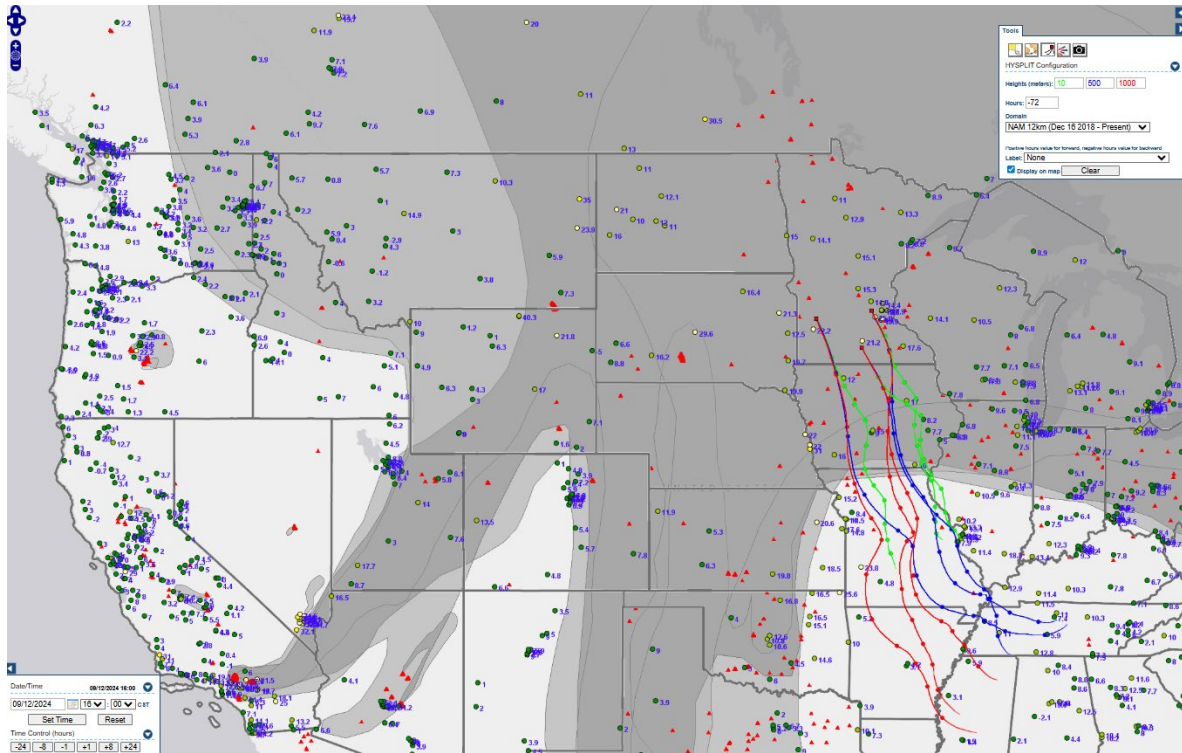
Analyzed smoke, hotspots, and 24-hour PM_{2.5} on September 12, 2024.



MODIS visible satellite for September 12, 2024.



Aerosol Optical Depth from GOES EAST for September 12, 2024. Source: Aerosol Watch.



Backward trajectories for September 12, 2024.