
LUDLOW PARK RESIDENTS ASSOCIATION MEETING

YONKERS JOINT WRRF MARCH 2023

A presentation by the Department of
Environmental Facilities

Vincent Kopicki, P. E. Commissioner

Meeting Agenda

- Introduction
- Completed & Current Odor Remediation Projects
- Future/Planned Capital Improvement Projects
- Yonkers-Joint Annual Performance
- Odor Control Operational Strategies
- Odor Complaint Data
- Proposed Environmental Intelligence Software
- Questions

Yonkers Joint O&M Management Team

Nat J. Federici, P. E.

- Deputy Commissioner
 - 813-5412

Steve Elie-Pierre P. E.

- Director, Wastewater Treatment
 - 813-5437

John Lennon

- Plant Superintendent
 - 231-2847

James Gabbamonte

- Program Administrator
 - 231- 2830

Thomas Niciu

- Supervisor, Plant Operations
 - 231-2845

Yonkers Joint WRRF



Yonkers-Joint WRRF Odor Remediation Projects (SY009)

Phase	Project Scope	Cost	Project Status
I	<ul style="list-style-type: none"> - Screen & Grit Building HVAC & Odor Control - Ludlow Street Pump Station Odor Control 	\$ 9.6 M	Completed & Operational
II	<ul style="list-style-type: none"> - HVAC System Upgrades to Blower & Administration Building - New Boilers 	\$ 9.8 M	Completed & Operational
III	<ul style="list-style-type: none"> - Odor Control for Primary Access Building & South Pumping Station - HVAC Systems Upgrade in several other buildings 	\$ 7.3 M	Construction Complete & Operational; Final Permitting & Punch List completed in Q3 2022
IV	<ul style="list-style-type: none"> - Secondary Sludge Thickener Building & HVAC Upgrades 	\$11.5 M	Project Split into Two Phases IVA & IVB, See Next Slide

Yonkers-Joint WRRF

Odor Remediation Projects (SY009) *(cont.)*

Phase	Project Scope	Cost	Project Status
IV <i>(expanded from original Phase V report)</i>	<ul style="list-style-type: none"> - Sludge Loading Bay Improvements <ul style="list-style-type: none"> - Increase airflow & install duct registers - New Scale and slab/pipe gallery - Interlock to keep doors closed during operations - Replace Primary Settling Tank Scrubbers A, B, and C <ul style="list-style-type: none"> - Replace existing blowers to increase efficiency - Replace chemical systems to increase removal - In-line blowers to preserve negative duct pressure - Real Time/Continuous Odor Monitoring System 	Included in the \$11.5M	Construction Notice To Proceed (NTP); 4 rd Quarter 2022. Pre-construction meeting 1 st Quarter 2023. Construction Duration: ~ 24 months
IVB <i>(expanded, as a result of recent investigations)</i>	<ul style="list-style-type: none"> - Installation of 3/8" Secondary Screens to address frequent tank outages - Modification to odor control ductwork at the Blower & Administration Building - Ducting to increase airflow during tank maintenance - New Turbo Blowers for improved process control - Flare Replacement 	TBD	Design start 4 th Quarter 2022. 30% design in 2 nd Quarter 2023. Design Duration: 2 Years

Yonkers-Joint WRRF

Other Capital Construction Projects

Project Scope	Project Status
<ul style="list-style-type: none"> - Sludge Thickening Upgrade <ul style="list-style-type: none"> - DAF Thickeners replaced with Gravity Belt Thickeners 	<p>Anticipated Completion by June 2023</p>
<ul style="list-style-type: none"> - Grit System Upgrade <ul style="list-style-type: none"> - Grit Removal System Refurbishment w/added redundancy 	<p>Construction complete. Punch list continuing.</p>
<ul style="list-style-type: none"> - Engine Replacement Project <ul style="list-style-type: none"> - Replace 2 Existing Engines (to run on ADG and/or Natural Gas) 	<p>Engines Procured 4th Quarter 2022. Construction Start 1st Quarter 2023</p>
<ul style="list-style-type: none"> - Sluice Gate Project <ul style="list-style-type: none"> - Replace Sluice Gates in Secondary System 	<p>In Construction. Gates to be delivered 3rd Quarter 2023</p>
<ul style="list-style-type: none"> - Secondary Treatment Upgrades <ul style="list-style-type: none"> - Systems Refurbishment in Secondary Treatment Area 	<p>Pre-Construction meeting held 1st Quarter 2023. Submittal review stage</p>
<ul style="list-style-type: none"> - Vulnerability Work ~ Infrastructure Hardening (Design) <ul style="list-style-type: none"> - Storm Resiliency Improvements (FEMA 500-yr storm) 	<p>30% Design in 3rd Quarter 2023. Coordination with various contracts</p>
<ul style="list-style-type: none"> - Plant-wide Electrical & Lighting Upgrades (Design) <ul style="list-style-type: none"> - Incoming service switchgear, distribution system & lighting 	<p>Design kickoff meeting in 3rd Quarter 2022. 30% design in Q3-Q4 2023</p>

Focused Odor Control Operational Strategies

➤ Operational/Plant Staff Implemented Odor Remediation Actions

➤ Best management practices implemented:

- Includes practice of removing sludge/floatables/residuals from the tanks prior to removing covers.
- Installed a stop log to prevent screenings short-circuiting at the screen and grit tanks during high flows (thereby preventing primary tank damage and minimizing tank outages)
- Installed a bar screen to remove debris prior to belt thickeners to prevent fouling & blinding of belts.
- Installed screens in the secondary scum pits to prevent equipment clogging and breakdowns
- Removed overgrowth of weeds & brush, replaced with stone to reduce insects & geese population
- Maintaining minimum water levels in out-of-service aeration tanks (2'-4') and keeping minimum aeration to keep water fresh and diffuser membranes submerged.
- Cleaned out two of the primary digesters to increase sludge digestion & replaced all valves
- Cleaned out both storage tanks (grit and rag removal)
- Cleaned out one secondary digester and replaced valves
- Coordinating and scheduling tank draining and cleanout activities when meteorological conditions are more favorable to not perceiving odors off-site.
- Every new employee is trained in odor control awareness, existing given toolbox talk reminders.
- Added 20 yd. container for screenings located indoors, replacing smaller containers staged outside.
- Continuously improving plant operations and housekeeping, which improve odor conditions.

Yonkers-Joint WRRF Plant Performance

Yonkers Joint WRRF Annual Performance Report

March 2022 - February 2023

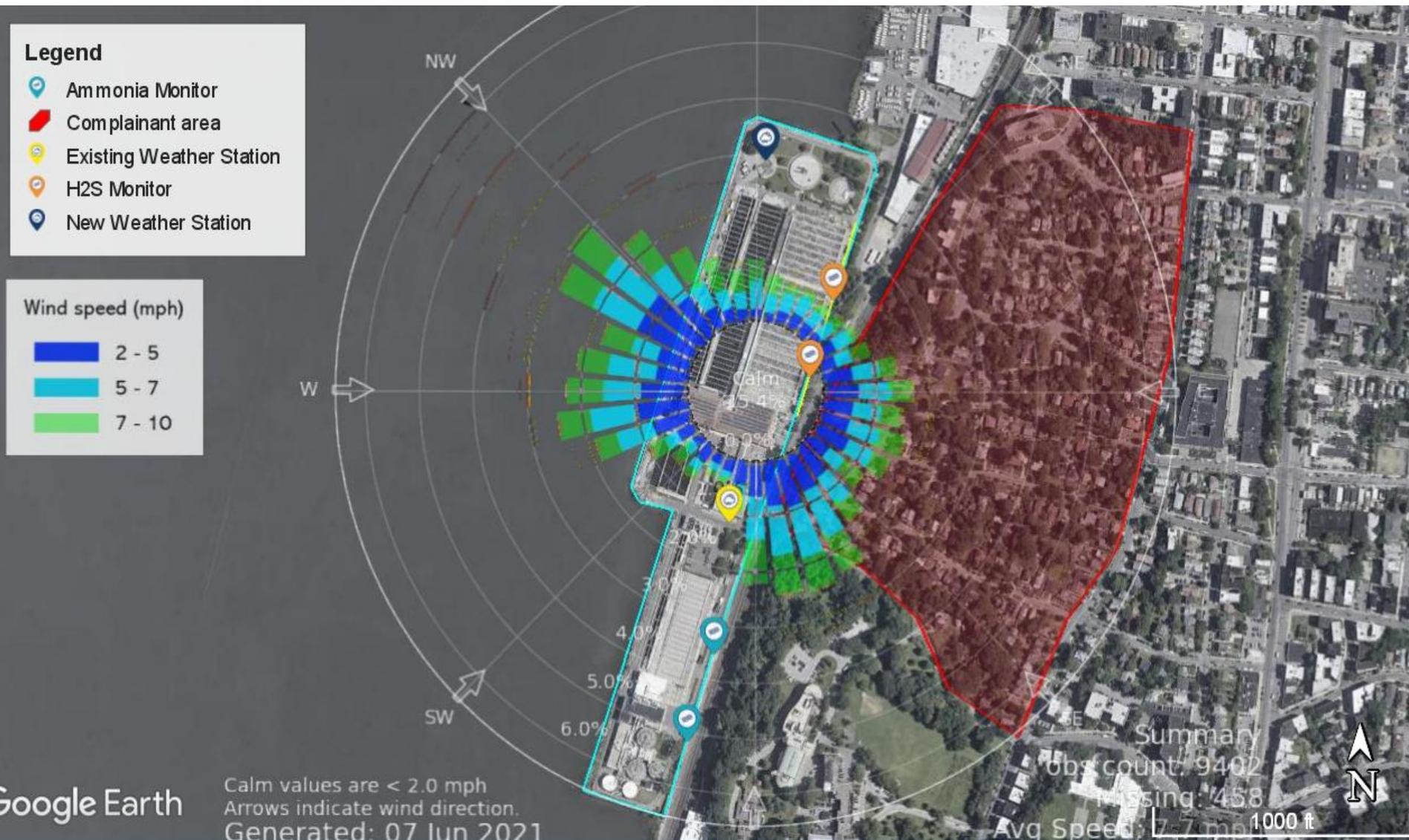
Month	Flow AVG. MGD	Suspended Solids			Biochemical Oxygen Demand			Sludge Removed			Screenings	Grit
		Influent MG/L	Effluent MG/L	Removal %	Influent MG/L	Effluent MG/L	Removal %	Wet Tons	Cake Solids % Solids	Dry Tons	Removed Pounds	Removed CU YD
Mar 2022	78	131	9	93	126	8	93	2,699	25.1	677	30,470	40
Apr 2022	104	111	12	89	91	9	89	2,569	27.6	710	34,707	80
May 2022	79	140	9	93	108	7	93	2,473	27.3	675	32,700	40
Jun 2022	81	137	7	94	108	6	94	2,975	24.6	732	25,000	80
Jul 2022	64	145	8	94	122	5	95	2,552	25.4	648	2,419	20
Aug 2022	57	148	6	96	128	6	95	2,169	25.9	563	2,419	80
Sep 2022	61	155	8	94	141	6	96	2,388	25.0	598	2,500	40
Oct 2022	66	171	8	95	130	7	94	2,553	24.6	627	1,613	20
Nov 2022	63	151	8	95	129	7	94	2,970	24.3	722	2,500	40
Dec 2022	80	143	12	91	114	8	92	2,568	22.9	587	4,032	60
Jan 2023	86	126	8	93	102	9	90	2,916	24.8	724	2,903	60
Feb 2023	72	132	9	92	119	9	92	3,953			143	60
Minimum	7	16	11	16	6	7	6	2,169	22.9	563	143	20
Maximum	24	233	24	26	7	71	7	3,953	27.6	732	34707	80
Total	195	515	197	250	79	153	79	32,785	277.5	7262	141407	620
Average	16	43	16	21	7	13	7	2,732	25.2	660	11784	52

Yonkers-Joint WRRF Odor Complaints

Month	Total Number of Complaints	Number of Days per Month	Correlated with Plant Activity
Mar 2022	12	9	10
Apr 2022	5	1	5
May 2022	3	3	2
Jun 2022	33	12	31
Jul 2022	40	17	40
Aug 2022	21	10	21
Sep 2022	16	14	16
Oct 2022	1	1	1
Nov 2022	3	3	3
Dec 2022	1	1	1
Jan 2023	0	0	0
Feb 2023	0	0	0
Totals	135	71	130

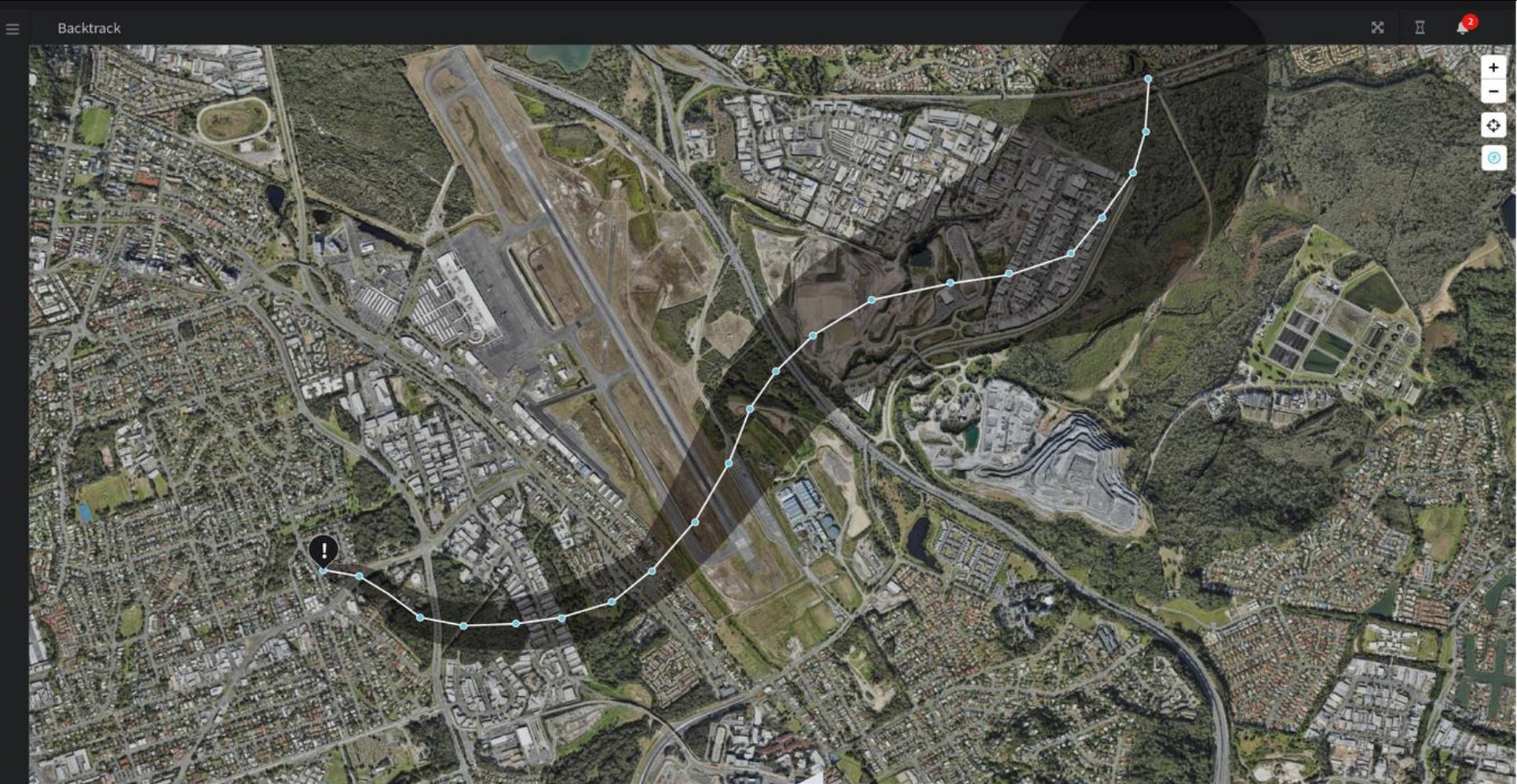
- **> 81%** of the Annual Complaints Occurred from June through September (110/135)
 - Plant experienced high frequency of tank outages during this period
 - Should not occur again this year

Example of the Real-time Monitoring, Risk Forecasting, and Trajectories *Environmental Intelligence Software*



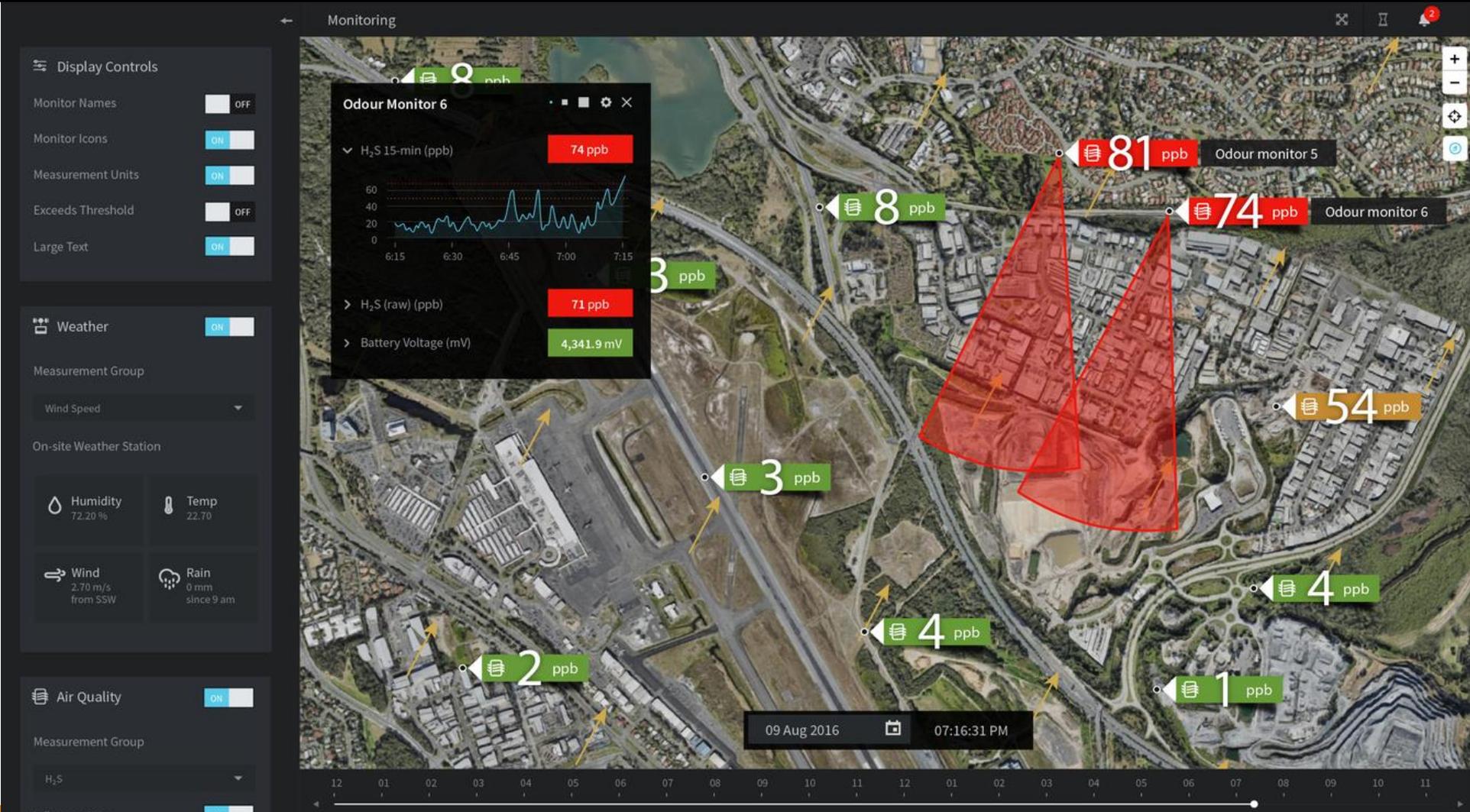
*The figure shows a map of the proposed instrumentation relative to dominant winds observed throughout the year by the weather station located at the Westchester County Airport (HPN)

Example of the Real-time Impact Modeling



***By combining real-time weather data and complex predictive modelling the EI Software platform enables users to understand how emissions will disperse in the environment and the areas that potential emission sources will impact.**

Example of the Real-time Impact



* This system delivers early warning of events and easy analysis of past events, so that we can manage and report on the information.

Questions?

