Supplementary Materials:

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Table S1. Comparison of defined functional requirements (Table 1) against specifications from commercially available sensor systems.

Naam	**Pollutant**		**Weatherproof**	**Measurement frequency**	Power			Communication protocol		Data Quality (R^2)		Visualisation	Price
	NO_2	**$PM_{2,5}$**		**1 minuut**	mains	batt	solar	WIFI	cellular	NO_2	$PM_{2,5}$		Indicatief (5 units)
AQMesh	+	+	+	+	+	+	+	-	+	0,04 tot 0,45	0,26	+	30 kEUR
Kunak	+	+	+	+	+	+	+	+	+	0,25 tot 0,33	0,55 tot 0,72	+	30 kEUR
AQT	+	+	+	+	+	+	-	+	-	0,43 tot 0,61	n/a	+	30 kEUR
AQY	+	+	+	+	+	-	-	+	(+)	0,41 tot 0,56	0,78 tot 0,87	+	18 kEUR
Praxis	+	+	+	+	+	+ (2u)	-	-	+	n/a	n/a	+	25 kEUR
Cairpol/cairsens	+	?	+							n/a	n/a		
AirVeraCity	+	+	+	+	+	+	-			n/a	n/a	+	45 kEUR
SCI - 608	+	+	+	n/a	+	-	+	-	+	n/a	n/a	+	25 kEUR
Airly	+	+	+	n/a	+	-	+	+	+	n/a	n/a	+	2 kEUR
Plug 'n sense	+	+	+	+	+	- (?)	+	+	+	n/a	n/a	-	?
AirSensEUR	+	+	+	+	+	+(1d)	-	+	+	0,89	n/a	-	12,5 kEUR

Table S2. Sensor specifications of the considered Kunak Air A10 and Airly PM+Gas sensors, derived from AQMD AQ-SPEC(http://www.aqmd.gov/aq-spec/home).

	Kunak Air A10	Airly PM + Gas
		
Dimensions	122 x 202 x 90 (H) (mm)	74 (L) x 83.5 (W) x 112 (H) mm
Weight	<1.5 kg	490 g
Battery	Yes	No
Power supply	5 - 17 V DC or solar panel	230V/110V or solar panel
Sensor lifetime	> 12 months	
Operating conditions	-20 to 50°C Temp	-30 - 40°C and 0 - 100% RH
Communication	GPRS, WiFi, RS232, Ethernet	GPRS; optional: WiFi, LoRa, NB-IoT
Data logging/retrieval	real time data is sent wirelessly to Kunak Air Cloud, a web platform for data storage, processing, analysis and export	Data is sent to cloud and downloaded via Airly's dashboard
Sampling period	10 sec - 24 h	1 - 24 h
Weatherproof	yes	yes

Table S3. Timing of the implemented traffic scenarios (baseline, knip and school-street) and holiday periods during the pilot study in Kampenhout.

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Scenario
08/02/2021	09/02/2021	10/02/2021	11/02/2021	**12/02/2021**	13/02/2021	14/02/2021	Baseline
15/02/2021	16/02/2021	17/02/2021	18/02/2021	19/02/2021	20/02/2021	21/02/2021	Holiday
22/02/2021	23/02/2021	24/02/2021	25/02/2021	26/02/2021	27/02/2021	28/02/2021	Baseline
01/03/2021	02/03/2021	03/03/2021	04/03/2021	05/03/2021	06/03/2021	07/03/2021	Knip
08/03/2021	09/03/2021	10/03/2021	11/03/2021	12/03/2021	13/03/2021	14/03/2021	Knip
15/03/2021	16/03/2021	17/03/2021	18/03/2021	19/03/2021	20/03/2021	21/03/2021	Knip
22/03/2021	23/03/2021	24/03/2021	25/03/2021	26/03/2021	27/03/2021	28/03/2021	Knip /Schoolstreet
29/03/2021	30/03/2021	31/03/2021	01/04/2021	02/04/2021	03/04/2021	04/04/2021	Covid-19 holiday
05/04/2021	06/04/2021	07/04/2021	08/04/2021	09/04/2021	10/04/2021	11/04/2021	Holiday
12/04/2021	13/04/2021	14/04/2021	15/04/2021	16/04/2021	17/04/2021	18/04/2021	Holiday
19/04/2021	20/04/2021	21/04/2021	22/04/2021	23/04/2021	24/04/2021	25/04/2021	Schoolstreet
26/04/2021	27/04/2021	28/04/2021	29/04/2021	30/04/2021	01/05/2021	02/05/2021	Schoolstreet
03/05/2021	04/05/2021	05/05/2021	06/05/2021	07/05/2021	08/05/2021	09/05/2021	Baseline
10/05/2021	11/05/2021	12/05/2021	13/05/2021	14/05/2021	15/05/2021	16/05/2021	Baseline

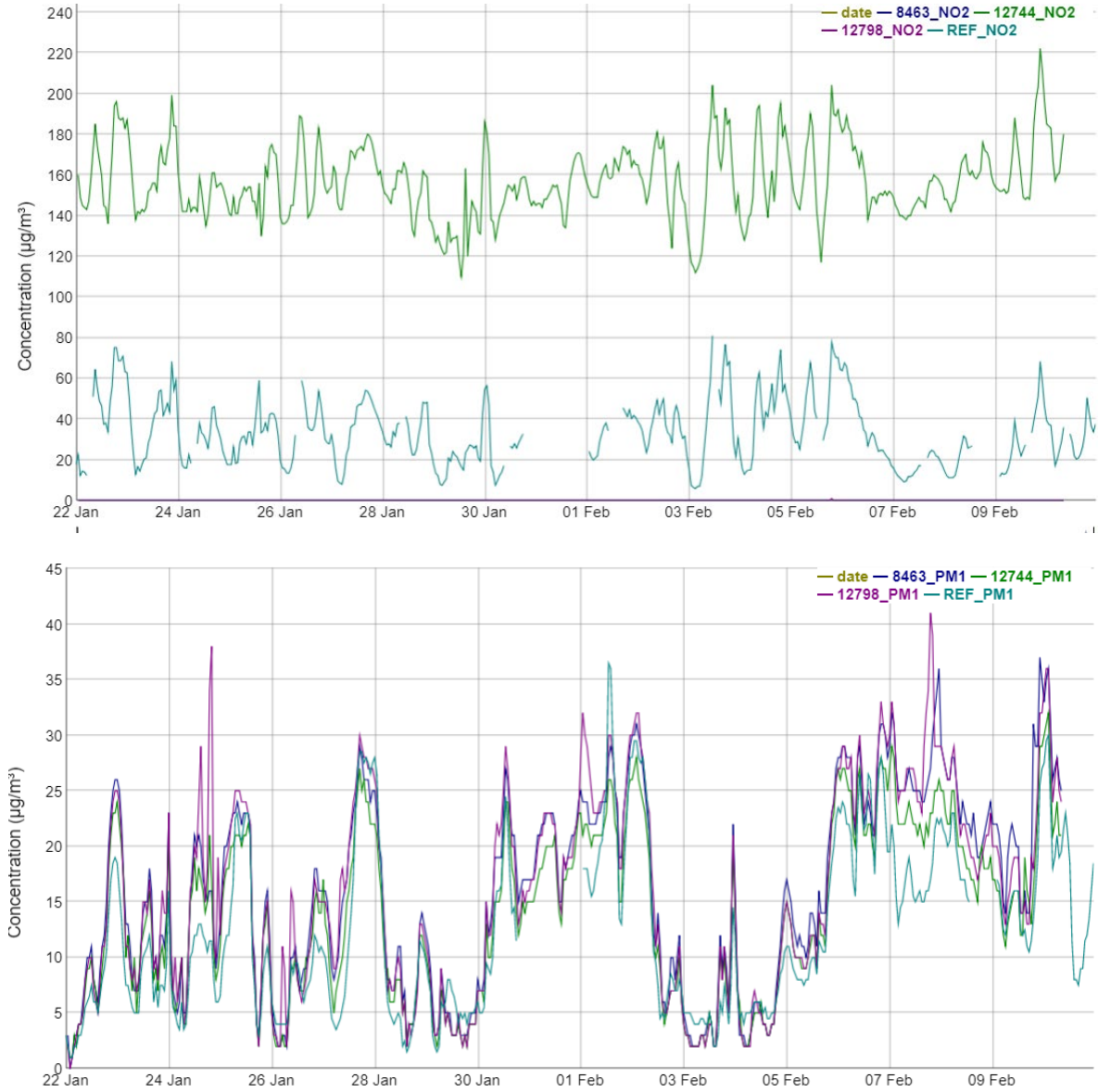


Figure S1. Hourly-aggregated time series graphs of NO_2 (upper) and PM_1 (lower) from the different Airly units (8463, 12744 and 12798) and reference measurements from the AQMS (42R801; REF) during the first co-location campaign (22/1/2021-10/2/2021). The Airly sensors do not contain a NO sensor.

Table S4 Data quality metrics (R^2, COR, RMSE, MAE, MBE, Uexp) calculated on the raw and locally re-calibrated (_cal) 24h-aggregated NO_2, NO, PM_1, $PM_{2.5}$ and PM_{10} data for each of the sensor units (3 x Kunak and 3 x Airly). Local re-calibration is based on slope correction (sensor=a*REF; Eq 1), except for the NO2 of Airly (NO2_cal*) where a multilinear model was applied (sen-sor=a*REF+b*Temp+c).





	NO_2			NO_2_cal			NO_2			NO_2_cal*		
	Kunak_1	**Kunak_2**	**Kunak_3**	**Kunak_1**	**Kunak_2**	**Kunak_3**	**Airly_846**	Airly_1274	Airly_1279	Airly_846	Airly_1274	Airly_1279
R^2	0.93	0.96	0.90	0.93	0.96	0.90	0.00	0.52	0.21		0.85	
COR	0.97	0.98	0.95	0.97	0.98	0.95	NA	0.72	0.45		0.92	
RMSE	10.57	7.67	10.70	3.06	2.05	4.02	35.30	122.23	35.29		3.78	
MAE	9.97	7.03	10.16	2.43	1.71	3.63	34.34	122.06	34.33		3.17	
MBE	-9.97	-7.03	-10.16	-1.78	0.38	-2.28	-34.34	122.06	-34.33		0.00	
Uexp	32.62	23.66	31.31	8.25	4.36	8.67	102.60	308.32	102.60		12.15	

	NO			**NO_cal**		
	Kunak_1	Kunak_2	Kunak_3	Kunak_1	Kunak_2	Kunak_3
R^2	0.84	0.74	0.66	0.84	0.74	0.66
COR	0.92	0.86	0.81	0.92	0.86	0.81
RMSE	2.48	3.24	3.42	1.89	3.52	3.82
MAE	2.08	2.47	2.49	1.41	2.71	2.69
MBE	-1.55	2.02	1.73	-0.19	2.37	2.27
Uexp	NA	NA	NA	NA	NA	NA

	PM_1			PM_1_cal			PM_1			PM_1_cal		
	Kunak_1	Kunak_2	Kunak_3	Kunak_1	Kunak_2	Kunak_3	Airly_846	Airly_1274	Airly_1279	Airly_846	Airly_1274	Airly_1279
R^2	0.74	0.76	0.76	0.74	0.76	0.76	0.91	0.92	0.89	0.91	0.92	0.89
COR	0.86	0.87	0.87	0.86	0.87	0.87	0.95	0.96	0.94	0.95	0.96	0.94
RMSE	9.32	9.49	9.68	3.33	3.10	3.28	3.96	2.15	4.27	1.74	1.58	1.99
MAE	8.33	8.50	8.74	2.73	2.61	2.58	3.20	1.60	3.34	1.33	1.11	1.31
MBE	-8.33	-8.50	-8.74	0.36	0.14	-0.09	3.17	1.34	3.21	0.46	0.43	0.38
Uexp	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

	$PM_{2.5}$			$PM_{2.5}$_cal			$PM_{2.5}$			$PM_{2.5}$_cal		
	Kunak_1	Kunak_2	Kunak_3	Kunak_1	Kunak_2	Kunak_3	Airly_846	Airly_1274	Airly_1279	Airly_846	Airly_1274	Airly_1279
R^2	0.05	0.01	0.03	0.05	0.01	0.03	0.86	0.89	0.84	0.86	0.89	0.84
COR	0.23	0.07	0.17	0.23	0.07	0.17	0.93	0.94	0.92	0.93	0.94	0.92
RMSE	7.65	7.94	7.87	7.13	7.73	7.34	14.77	10.36	14.73	2.64	2.58	2.80
MAE	6.17	6.62	6.44	6.64	6.84	6.70	12.45	8.54	12.31	2.10	2.08	2.23
MBE	-5.12	-5.03	-5.26	1.33	1.51	1.32	12.45	8.20	12.31	-0.12	-0.33	-0.13
Uexp	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

	PM_{10}			PM_{10}_cal			PM_{10}			PM_{10}_cal		
	Kunak_1	Kunak_2	Kunak_3	Kunak_1	Kunak_2	Kunak_3	Airly_846	Airly_1274	Airly_1279	Airly_846	Airly_1274	Airly_1279
R^2	0.01	0.04	0.02	0.01	0.04	0.02	0.54	0.57	0.52	0.54	0.57	0.52
COR	-0.11	-0.19	-0.14	-0.11	-0.19	-0.14	0.73	0.76	0.72	0.73	0.76	0.72
RMSE	11.03	11.67	11.33	10.59	11.54	11.18	17.48	11.19	16.99	6.59	7.12	6.87
MAE	9.53	10.37	10.04	9.43	10.32	9.98	14.07	9.64	13.63	5.38	5.88	5.73
MBE	-7.10	-6.97	-6.66	-5.54	-6.41	-5.97	12.54	5.21	11.76	-0.74	-0.97	-0.73
Uexp	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

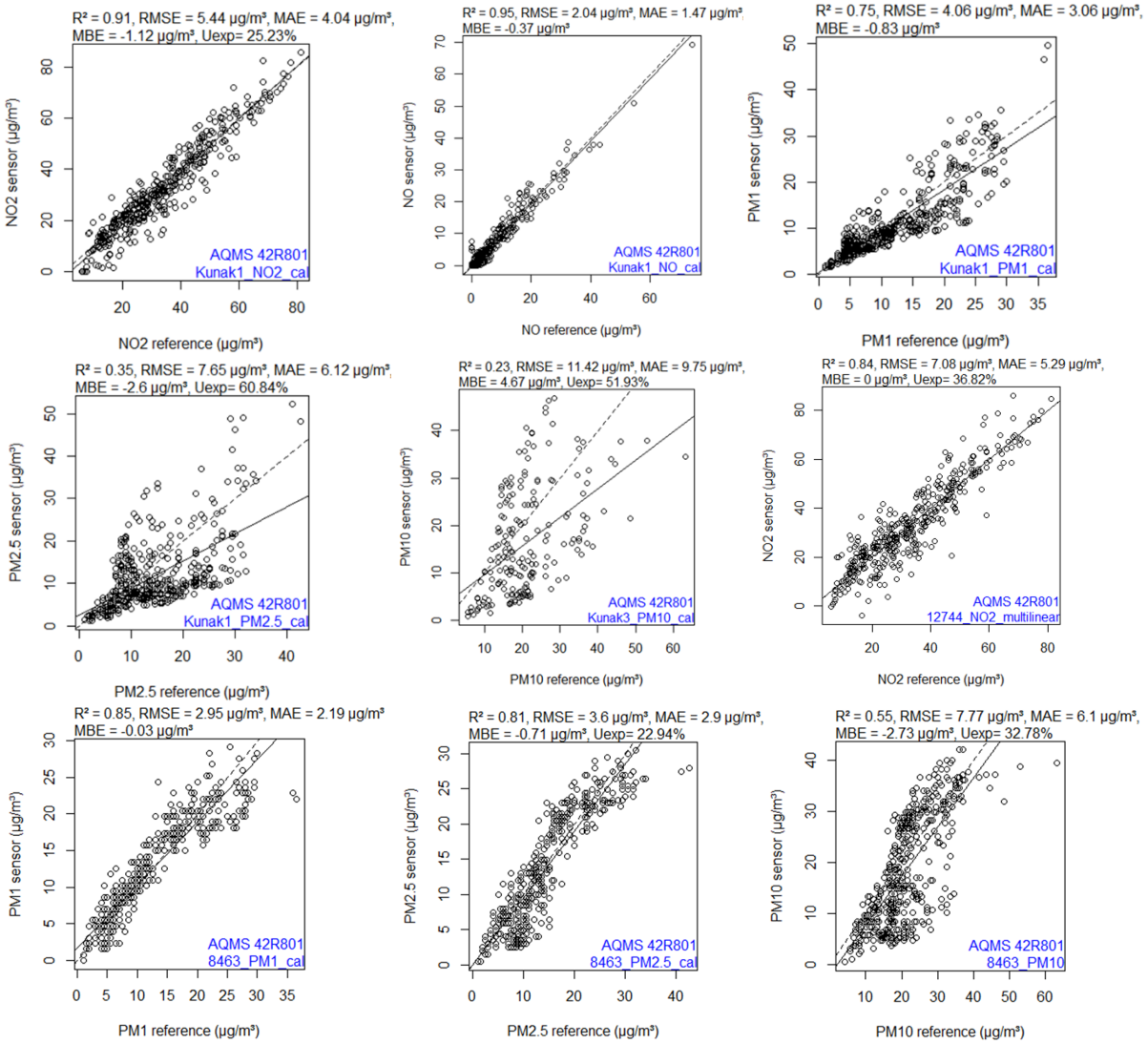


Figure S2. Regression plots with associated performance metrics (R^2, RMSE, MAE, MBE and Uexp) after slope re-calibration for NO_2, NO, PM_1, $PM_{2.5}$ and PM_{10} from both the Kunak 1 and Airly 9463 sensor unit.

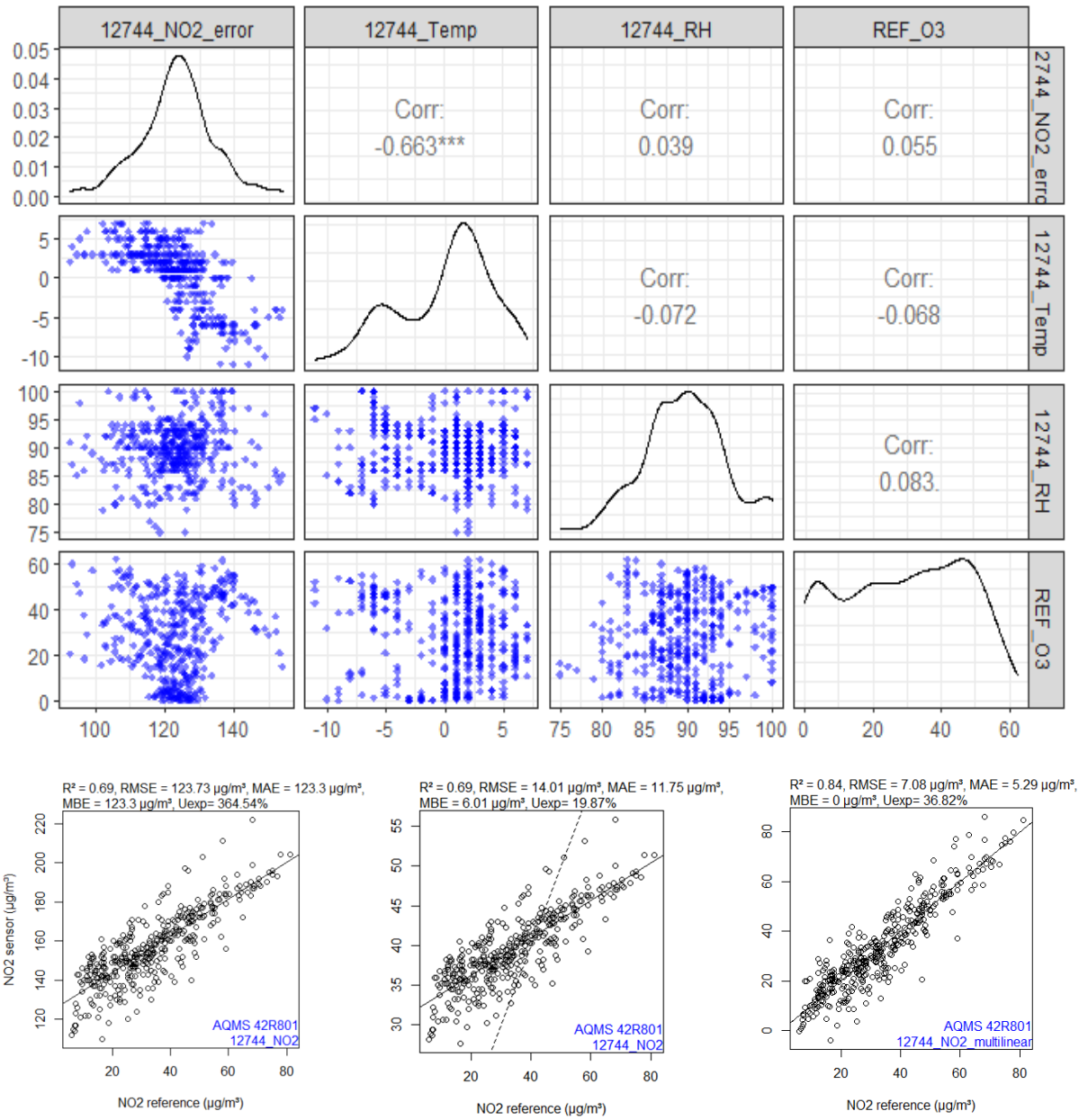


Figure S3. Upper graph: Sensitivity of the residual hourly NO_2 variation (sensor-REF) towards temperature (°C), realtive humidity (%) and ozone (O_3; derived from AQMS R801) with associated scatterplots, historgrams and Pearson correlation tests. Lower graphs: Regression plots between raw (left), slope re-calibrated (middle) and multilinear re-calibrated (right) sensor and reference NO_2 data, with associated performance metrics (R^2, RMSE, MAE, MBE, Uexp).

Table S5. Derived unit-specific slope calibration factors for every pollutant (NO_2, NO, PM_1, $PM_{2.5}$ and PM_{10}) of each co-location (1-3) campaigns**.** Slope factors of co-location campaign 1 are used in the Kampenhout pilot, while slope factors derived from co-location 2 are applied in the Sint-Niklaas pilot.

		NO_2	**NO**	**PM_1**	**$PM_{2.5}$**	**PM_{10}**
		slope	*slope*	*slope*	*slope*	*slope*
CO-LOCATION 1 22/1/2021-10/2/2021	Kunak 1	0.74	0.81	0.34	0.61	0.66
	Kunak 2	0.78	0.96	0.33	0.61	0.66
	Kunak 3	0.75	0.94	0.32	0.60	0.65
	Airly 1	no data	-	1.22	1.91	1.66
	Airly 2	3.97	-	1.07	1.63	1.31
	Airly 3	no data	-	1.23	1.90	1.62
		NO_2	**NO**	**PM_1**	**$PM_{2.5}$**	**PM_{10}**
		slope	*slope*	*slope*	*slope*	*slope*
CO-LOCATION 2 18/5/2021-8/6/2021	Kunak 1	0.83	0.61	0.51	0.82	0.83
	Kunak 2	0.96	1.01	0.52	0.82	0.83
	Kunak 3	0.85	0.89	0.68	0.74	0.69
	Airly 1	1.83	-	0.54	0.75	0.60
	Airly 2	1.68	-	0.52	0.70	0.54
	Airly 3	1.60	-	0.54	0.73	0.58
		NO_2	**NO**	**PM_1**	**$PM_{2.5}$**	**PM_{10}**
		slope	*slope*	*slope*	*slope*	*slope*
CO-LOCATION 3 21/9/2021-14/11/2021	Kunak 1	0.90	0.64	0.40	0.63	0.67
	Kunak 2	1.07	0.72	0.46	0.73	0.77
	Kunak 3	0.78	0.73	0.44	0.51	0.49
	Airly 1 (86560)	1.04	-	0.66	0.91	0.90
	Airly 2 (86575)	0.79	-	0.65	0.89	0.88
	Airly 3	-	-	-	-	-

Table S6. Raw and slope re-calibrated (CAL) sensor performance (R^2, MAE, MBE, U_{exp}) calculated for NO_2, NO and PM_1, for every sensor unit (Kunak 1-3 and Airly 1-3) in every co-location campaign.

		NO_2 RAW				NO_2 CAL				NO RAW				NO CAL				PM_1 RAW				PM_1 CAL			
		R^2	MAE	MBE	Uexp	R^2	MAE	MBE	Uexp	R^2	MAE	MBE	Uexp	R^2	MAE	MBE	Uexp	R^2	MAE	MBE	Uexp	R^2	MAE	MBE	Uexp
CO-LOCATION 1 22/1/2021-10/2/2021	Kunak 1	0.92	9.04	-9.04	42.95	0.92	4.01	-0.74	26.20	0.98	2.21	-2.16	27.76	0.98	1.20	-0.91	8.87	0.73	9.05	-9.05	NA	0.73	3.59	0.24	NA
	Kunak 2	0.94	6.42	-6.38	33.00	0.94	3.38	1.04	25.11	0.90	2.52	0.58	15.71	0.90	2.54	0.88	12.27	0.73	9.23	-9.23	NA	0.73	3.71	0.03	NA
	Kunak 3	0.95	9.50	-9.50	39.66	0.95	4.67	-1.61	26.77	0.88	2.66	0.64	15.71	0.88	2.77	1.12	12.27	0.75	9.47	-9.47	NA	0.75	3.65	-0.17	NA
	Airly 1	0.00	33.44	-33.44	110.07					NA	NA	NA	NA	NA	NA	NA	NA	0.85	3.91	3.30	NA	0.85	2.33	0.49	NA
	Airly 2	0.69	123.30	123.30	364.54	0.84	5.29	0.00	36.82	NA	NA	NA	NA	NA	NA	NA	NA	0.87	2.50	1.39	NA	0.87	2.16	0.44	NA
	Airly 3	0.02	33.44	-33.44	110.07					NA	NA	NA	NA	NA	NA	NA	NA	0.82	3.95	3.35	NA	0.82	2.30	0.40	NA

		NO_2 RAW				NO_2 CAL				NO RAW				NO CAL				PM_1 RAW				PM_1 CAL			
		R^2	MAE	MBE	Uexp	R^2	MAE	MBE	Uexp	R^2	MAE	MBE	Uexp	R^2	MAE	MBE	Uexp	R^2	MAE	MBE	Uexp	R^2	MAE	MBE	Uexp
CO-LOCATION 2 18/5/2021-8/6/2021	Kunak 1	0.58	8.81	-3.50	46.13	0.58	9.85	0.20	53.99	0.88	1.38	-1.28	39.09	0.88	1.26	-0.57	6.24	0.78	4.76	-4.71	NA	0.78	2.71	-0.51	NA
	Kunak 2	0.66	7.55	-0.34	34.75	0.66	7.86	0.51	35.10	0.68	1.79	0.92	21.70	0.68	1.76	0.88	22.90	0.77	4.71	-4.61	NA	0.77	2.82	-0.39	NA
	Kunak 3	0.69	7.54	-3.87	38.97	0.69	8.20	-0.57	38.75	0.74	1.43	0.23	21.70	0.74	1.57	0.56	22.90	0.96	3.36	-3.35	NA	0.96	1.38	-0.59	NA
	Airly 1	0.23	30.29	30.24	122.96	0.41	12.25	0.00	51.77	NA	NA	NA	NA	NA	NA	NA	NA	0.98	3.95	-3.95	NA	0.94	1.34	0.47	NA
	Airly 2	0.28	26.23	25.26	92.92	0.50	10.59	0.00	80.95	NA	NA	NA	NA	NA	NA	NA	NA	0.80	4.22	-3.97	NA	0.80	1.97	0.85	NA
	Airly 3	0.43	22.66	22.35	83.89	0.44	11.79	0.00	83.75	NA	NA	NA	NA	NA	NA	NA	NA	0.79	4.08	-3.88	NA	0.79	1.99	0.72	NA

		NO_2 RAW				NO_2 CAL				NO RAW				NO CAL				PM_1 RAW				PM_1 CAL			
		R^2	MAE	MBE	Uexp	R^2	MAE	MBE	Uexp	R^2	MAE	MBE	Uexp	R^2	MAE	MBE	Uexp	R^2	MAE	MBE	Uexp	R^2	MAE	MBE	Uexp
CO-LOCATION 3 21/9/2021-14/11/2021	Kunak 1	0.79	6.11	-4.17	53.83	0.79	6.49	-1.22	51.06	0.98	5.54	-5.54	46.77	0.98	2.91	-2.07	14.12	0.76	7.01	-6.97	NA	0.76	3.19	0.02	NA
	Kunak 2	0.86	5.84	1.63	41.25	0.86	4.65	-0.54	42.03	0.96	4.01	-3.47	38.73	0.96	2.41	-0.26	13.78	0.79	6.29	-6.25	NA	0.79	3.05	-0.06	NA
	Kunak 3	0.81	9.20	-8.91	67.01	0.81	8.07	-2.57	58.00	0.95	4.02	-3.30	38.73	0.95	2.49	-0.15	13.78	0.77	6.74	-6.66	NA	0.77	2.93	-0.47	NA
	Airly 1	0.38	12.18	7.71	49.98	0.30	27.09	5.40	135.52	NA	NA	NA	NA	NA	NA	NA	NA	0.65	3.65	-2.68	NA	0.65	3.65	-2.68	NA
	Airly 2	0.59	10.05	-6.81	62.48	0.65	8.25	-0.01	49.16	NA	NA	NA	NA	NA	NA	NA	NA	0.73	3.48	-2.86	NA	0.73	3.48	-2.86	NA

Table S7. Descriptive statistics (Min, 25%, Median, Mean, 75%, Max, NA's and Data capture) of meteorological and pollutant data collected at the different monitoring locations (School, Environment and Background) during the Kampenhout pilot.

	SCHOOL							
	PM1	**PM2.5**	**PM10**	**NO2**	**NO**	**Temp**	**RH**	**Pressure**
	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	°C	%	hPa
Min	0	0	0.62	0	0	-8	39	995
25%	1.63	2.11	3.7	2.37	0.02	6	70	1013
Median	4.06	4.21	7.1	13.14	1.84	9	81	1020
Mean	**5.07**	**5.59**	**9.32**	**16.03**	**4.66**	**8.85**	**78.44**	**1020**
75%	7.31	8.43	12.96	24.65	6.49	12	88	1028
Max	24.37	26.33	45.06	107.58	190.02	26	100	1040
NA's	117	117	117	106	106			
Data Coverage (%)	95	95	95	96	96			
	ENVIRONMENT							
	PM1	**PM2.5**	**PM10**	**NO2**	**NO**	**Temp**	**RH**	**Pressure**
	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	°C	%	hPa
Min	0	0	0	0	0	-8	33	994
25%	2.1	2.46	3.81	7.54	0.01	5	67	1013
Median	4.66	4.92	7.63	17.76	1.93	9	80	1021
Mean	**5.64**	**5.93**	**9.96**	**19.21**	**4.64**	**8.76**	**76.96**	**1020**
75%	8.38	9.23	14.49	28.01	6.56	12	89	1028
Max	20.48	25.83	45.77	181.59	374.26	26	100	1043
NA's	17	17	17	17	17			
Data coverage (%)	99	99	99	99	99			
	BACKGROUND							
	PM1	**PM2.5**	**PM10**	**NO2**	**NO**	**Temp**	**RH**	**Pressure**
	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	°C	%	hPa
Min	0	0	0.6	0	0	-8	33	994
25%	1.64	2.1	3.61	2.72	0	5	67	1013
Median	4.1	4.2	6.63	13.66	0	9	80	1021
Mean	**5.18**	**5.5**	**8.97**	**15.45**	**0.9**	**8.76**	**76.96**	**1020**
75%	7.38	8.39	12.65	24.37	0.38	12	89	1028
Max	29.53	27.79	39.16	81.48	42.17	26	100	1043
NA's	17	17	17	15	15			
Data Coverage (%)	99	99	99	99	99			

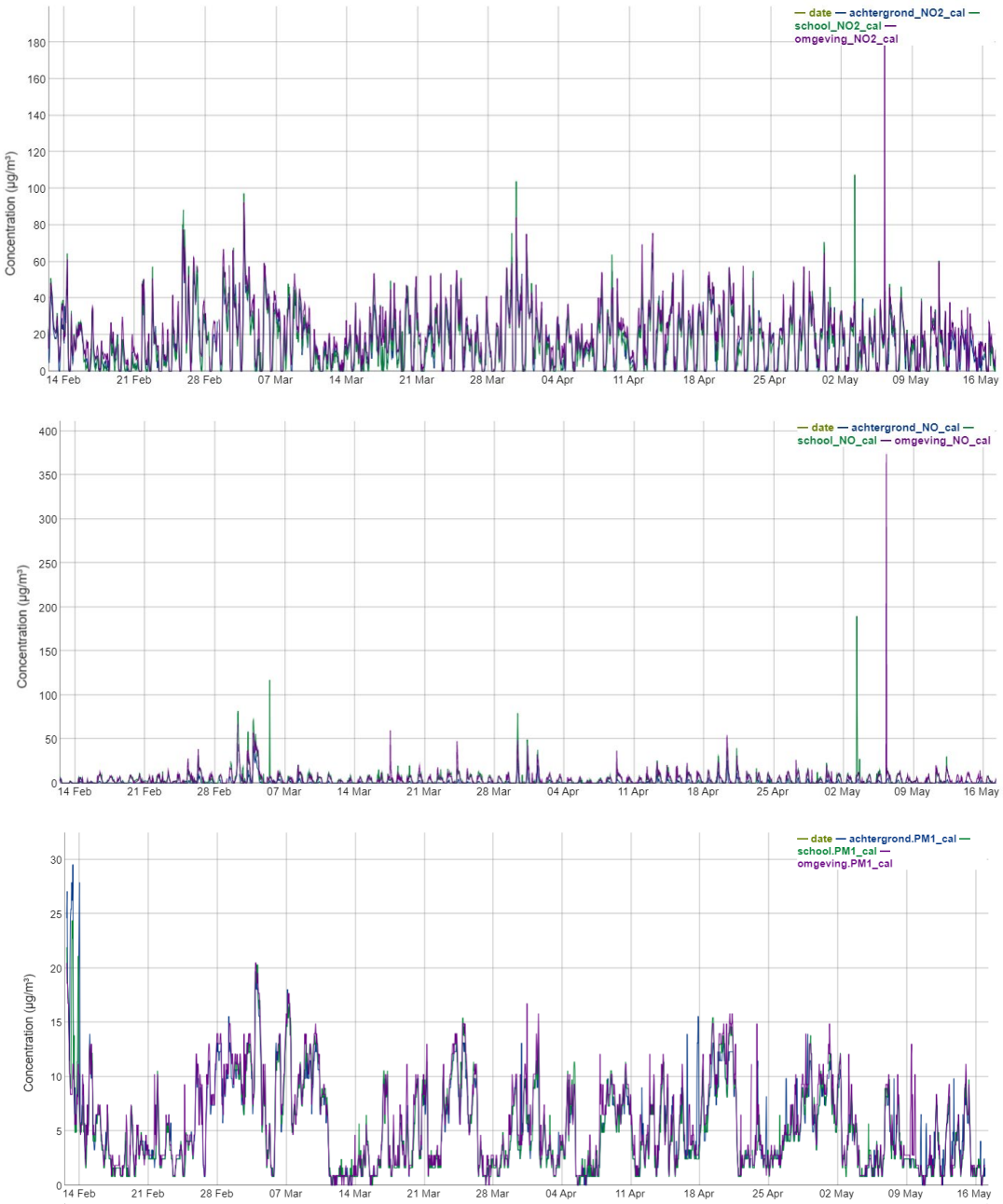
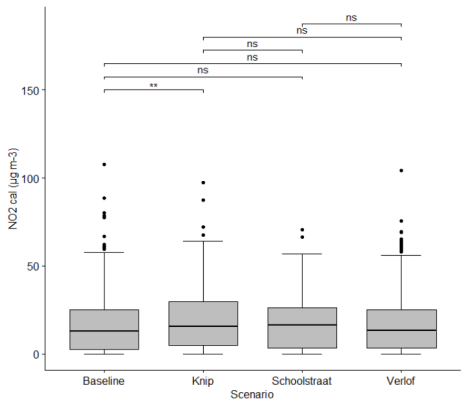
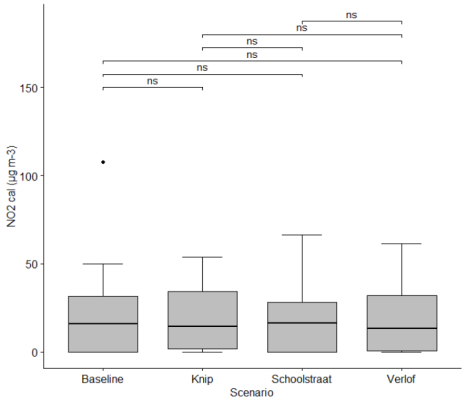


Figure S4. Time series graphs of NO_2 (Kunak; upper), NO (Kunak; middle) and PM_1 (Airly; lower) concentrations during the Kampenhout pilot, exhibited at the background (achtergrond), school and environment (omgeving) location.

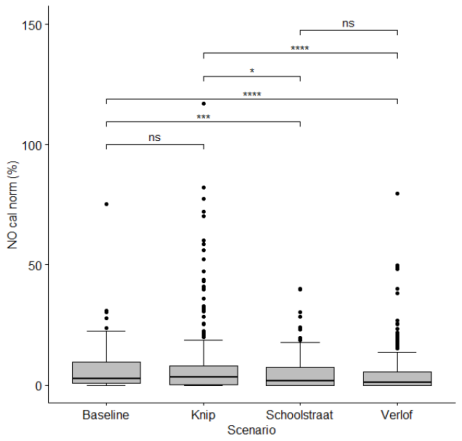
WEEKDAYS (n=1776) **SCHOOL HOURS (n=161)**



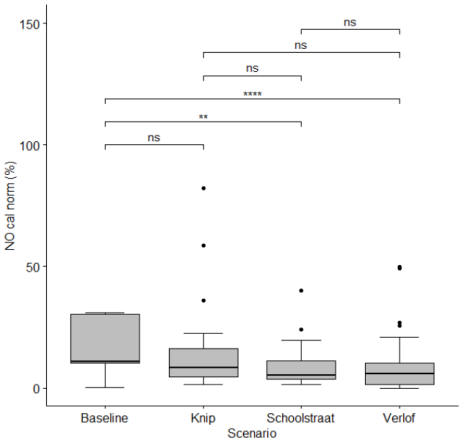
Scenario <fctr>	count <int>	mean <dbl>	sd <dbl>	median <dbl>	IQR <dbl>
Baseline	589	15.94755	15.68402	13.03509	22.29618
Knip	384	19.24741	16.88454	15.58543	24.91093
Schoolstraat	275	17.54683	14.83976	16.51283	22.65684
Verlof	528	16.62241	15.63321	13.44727	21.56844



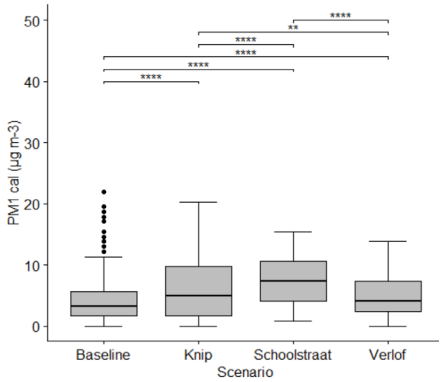
Scenario <fctr>	count <int>	mean <dbl>	sd <dbl>	median <dbl>	IQR <dbl>
Baseline	62	17.89238	19.66162	15.92033	31.81489
Knip	32	19.86924	17.95069	14.58075	32.53620
Schoolstraat	23	17.43127	18.72449	16.20370	28.22123
Verlof	44	18.58952	19.45974	13.39574	31.28679



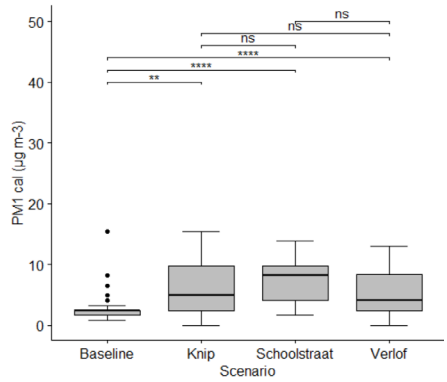
Scenario <fctr>	count <int>	mean <dbl>	sd <dbl>	median <dbl>	IQR <dbl>
Baseline	589	6.147377	10.986547	2.625914	8.769779
Knip	384	7.406139	13.426319	3.305562	7.954973
Schoolstraat	275	4.585716	6.591498	1.714567	7.290772
Verlof	528	3.837824	7.059725	1.173938	5.610959



Scenario <fctr>	count <int>	mean <dbl>	sd <dbl>	median <dbl>	IQR <dbl>
Baseline	62	18.776613	25.089493	10.920711	20.192503
Knip	32	13.909868	17.096633	8.387477	11.685315
Schoolstraat	23	9.160476	8.819253	5.329060	7.352558
Verlof	44	9.095210	11.429872	5.908305	8.680961



Scenario <fctr>	count <int>	mean <dbl>	sd <dbl>	median <dbl>	IQR <dbl>
Baseline	589	3.946331	3.142536	3.249391	4.061738
Knip	384	6.069492	4.676553	4.874086	8.123477
Schoolstraat	275	7.290068	4.033805	7.311129	6.498781
Verlof	528	4.838633	3.155366	4.061738	4.874086

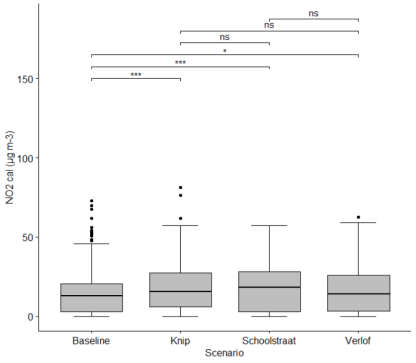


Scenario <fctr>	count <int>	mean <dbl>	sd <dbl>	median <dbl>	IQR <dbl>
Baseline	62	2.591109	2.207502	2.437043	0.8123477
Knip	32	5.843662	4.326184	4.874086	7.3111292
Schoolstraat	23	7.311129	3.698393	8.123477	5.6864338
Verlof	44	5.151023	3.428387	4.061738	5.8895207

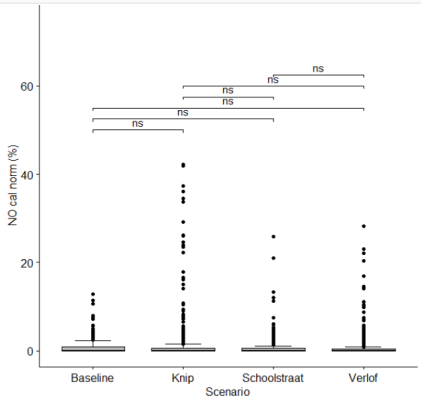
Figure S5. Boxplots with associated Wilcoxon Rank scores for the NO_2 (upper), NO (middle) and PM_1 (lower) concentration differences, observed at the **school location**, during the implemented traffic scenarios (and holidays) for both weekdays (n=1776; left) and school opening/closing hours

(n=161; right). Associated descriptive statistics (n, mean, standard deviation (sd), median and interquartile range (IQR)) are provided below each plot.

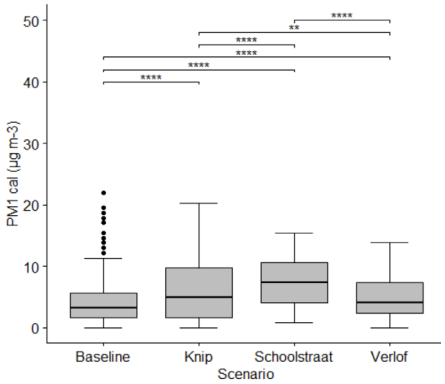
WEEKDAYS (n=1776)



Scenario	count	mean	sd	median	IQR
<fctr>	<int>	<dbl>	<dbl>	<dbl>	<dbl>
Baseline	589	14.11396	12.97808	13.11122	17.68609
Knip	384	17.78077	14.65610	15.46255	21.41755
Schoolstraat	275	18.17479	14.28584	18.12057	25.47487
Verlof	528	16.70066	14.56924	14.10798	22.59960

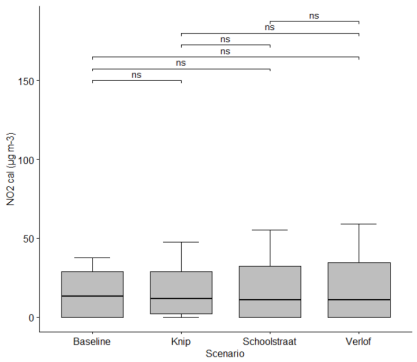


Scenario	count	mean	sd	median	IQR
<fctr>	<int>	<dbl>	<dbl>	<dbl>	<dbl>
Baseline	589	0.7989406	1.574741	0	0.9325986
Knip	384	1.9490281	6.153164	0	0.5828741
Schoolstraat	275	0.9099226	2.654818	0	0.5007418
Verlof	528	0.8743312	2.725555	0	0.3629716

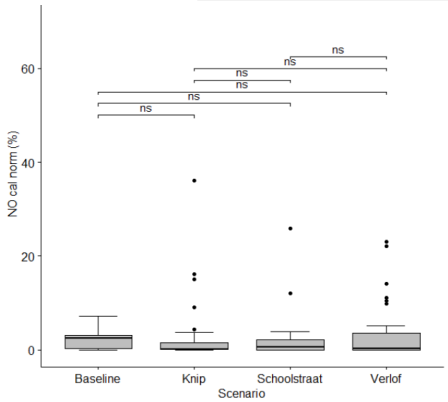


Scenario	count	mean	sd	median	IQR
<fctr>	<int>	<dbl>	<dbl>	<dbl>	<dbl>
Baseline	589	3.946331	3.142536	3.249391	4.061738
Knip	384	6.069492	4.676553	4.874086	8.123477
Schoolstraat	275	7.290068	4.033805	7.311129	6.498781
Verlof	528	4.838633	3.155366	4.061738	4.874086

SCHOOL HOURS (n=161)



Scenario	count	mean	sd	median	IQR
<fctr>	<int>	<dbl>	<dbl>	<dbl>	<dbl>
Baseline	62	13.57002	13.51986	13.36680	28.82935
Knip	32	16.96552	15.17381	11.70553	26.82305
Schoolstraat	23	16.95046	18.20168	11.19437	32.53525
Verlof	44	17.61464	19.10258	11.11770	34.52877



Scenario	count	mean	sd	median	IQR
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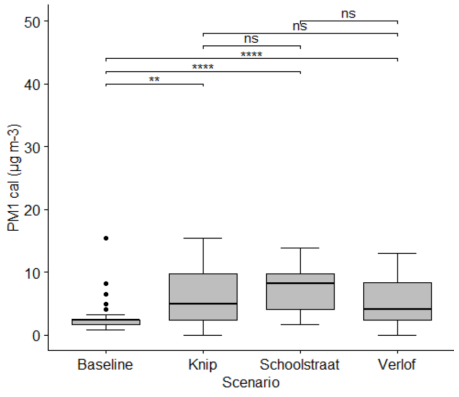
Baseline	62	1.832037	1.411980	2.4268758	2.871980
Knip	32	3.003255	7.376883	0.1483680	1.563162
Schoolstraat	23	2.437934	5.730654	0.6252649	2.177830
Verlof	44	3.007341	5.468556	0.3020348	3.550233



Scenario	count	mean	sd	median	IQR
<fctr>	<int>	<dbl>	<dbl>	<dbl>	<dbl>
Baseline	62	2.591109	2.207502	2.437043	0.8123477
Knip	32	5.843662	4.326184	4.874086	7.3111292
Schoolstraat	23	7.311129	3.698393	8.123477	5.6864338
Verlof	44	5.151023	3.428387	4.061738	5.8895207

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interquartile range (IQR)) are provided below each plot.

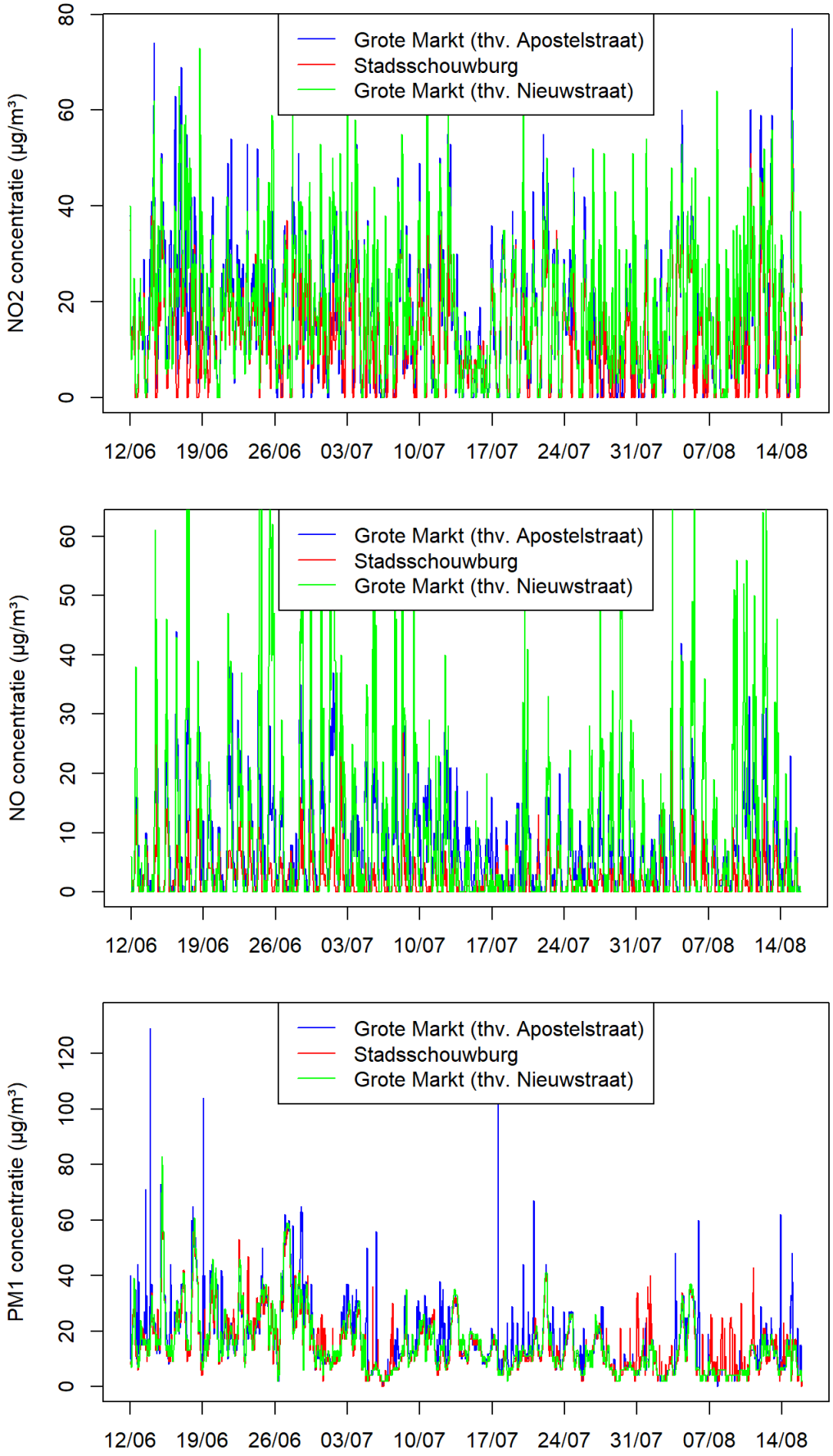

Figure S7. Time series graphs of the collected NO_2 (Kunak; upper), NO (Kunak; middle) and PM_1 (Airly; lower) sensor data at the background (Stadsschouwburg) and Grote Markt (Apostelstraat and Nieuwstraat) locations in Sint-Niklaas.

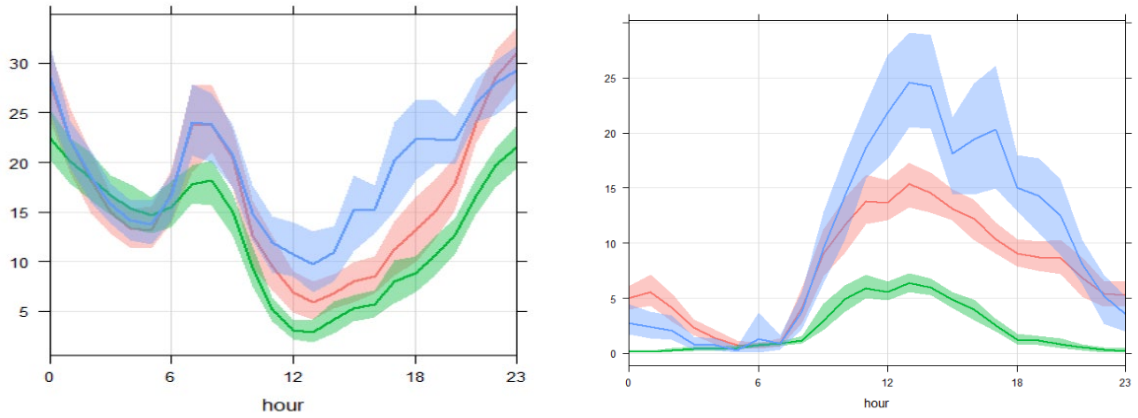

Figure S8. Hourly-averaged concentrations (μg m^{-3}) for NO_2 (left) and NO (right) from the background (green), Grote Markt 1 (red) and Grote Markt 2 (blue) location.

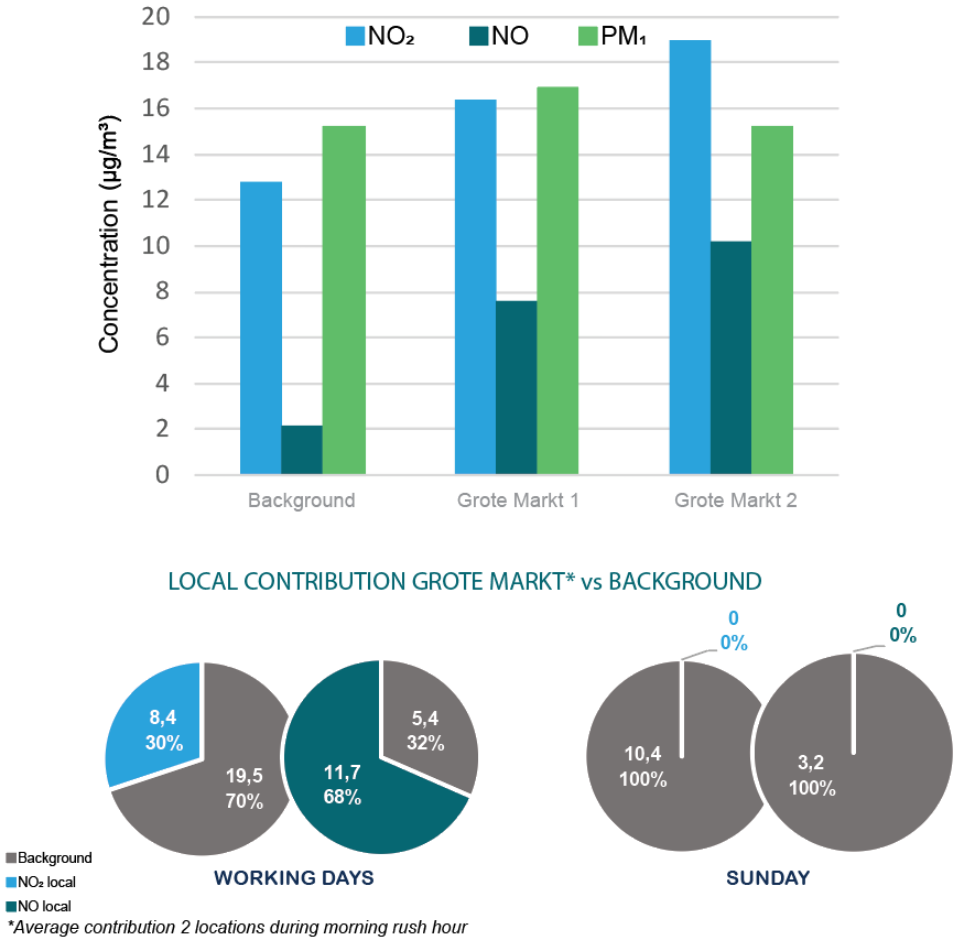

Figure S9. Mean pollutant concentrations (μg m^{-3}) for NO_2 , NO and PM_1 at the background and Grote Markt locations (upper panel) and local NO_2 and NO contribution at the Grote Markt during morning rush hour (6-9h) on working days (left) and Sundays (right). For PM_1, no notable local contributions (exceeding the background concentration) were observed.