T.C. ULAŞTIRMA VE ALTYAPI BAKANLIĞI

EPC Contractor

REC ULUSLARARASI

PROJECT

NORTHERN MARMARA MOTORWAY SECTION 8 PPP PROJECT

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Air Quality and Emission Control Plan

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Abbreviations and Acronyms

AQMCP	Air Quality and Emission Control Plan
CLO	Community Liaison Officer
EHS	Environmental, Health, and Safety
EPA	Environmental Protection Agency
EPC	Engineering, Procurement and Construction
EPRP	Emergency Preparedness and Response Plan
EBRD	European Bank for Reconstruction and Development
ESIA	Environmental and Social Impact Assessment
ESMMP	Environmental and Social Management and Monitoring Plan
CESMP	Construction Environmental and Social Management Plan
ESMS	Environmental and Social Management System
EHSS	Environmental, Health, Safety, and Security
ESHS	Environmental, Social, Health and Safety
GIIP	Good International Industry Practice
GBVH	Gender-Based Violence and Harassment
HSE	Health, Safety and Environment
IFC	International Finance Corporation
ISO	International Organization for Standardization
KPIs	Key Performance Indicators
NMM	Northern Marmara Motorway
OHS	Occupational Health and Safety
PPE	Personal Protective Equipment
PM10	Particulate matter (dust) with a diameter of 10 µm or less
PS	Performance Standards
REC	REC International
SDSs	Safety Data Sheets
SPV	Special Purpose Vehicle (Nakkaş Otoyol A.Ş.)
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
WHO	World Health Organization

1. PURPOSE

This Air Quality and Emission Control Plan (AQECP) was prepared by the EPC Contractor "REC International" (hereafter called "REC") which is applicable to the construction phase of the Project.

The ultimate responsibility for its implementation resides with REC, and REC's sub-contractors & suppliers will be required to demonstrate compliance of their activities against this plan. This plan is intended to be 'living document' that can be refined and modified as situations change.

The purpose of this Plan:

- Defining country legislation and Project standards,
- Defining the duties and responsibilities of the personnel,
- Identification of impact avoidance and mitigation measures for the management of potential air quality impacts during construction

2. SCOPE

Emissions during project construction will contribute to national air pollutant levels and thereby affect the health of nearby communities. The overall objective of this management plan is to identify and minimize air pollutant emissions and potential impacts from construction activities.

The plan refers to potential emission sources during construction and identifies how effective safeguards and appropriate emission controls will be implemented to ensure ambient air quality is maintained and minimize air quality impacts on adjacent receptors. This AQECP covers all construction-related operations, including HSE activities.

A separate Air Quality and Emission Control Plan for the operation phase will be prepared by Nakkaş Otoyol A.Ş.

This plan will be used to minimize particulate matter (e.g., dust) generated during the following activities:

- Cleaning and preparation of the land surface;
- Excavation and filling activities;
- Material handling;
- Topsoil stockpile storage;
- Passage of transport trucks (especially on stabilized roads);
- Use of dump trucks; and
- Operation of ready mixed concrete plant etc.

Particulate matter levels derived from construction activities will be assessed against legal requirements and international standards. If the particulate matter level is found to be at risk of exceeding these conditions, preventive actions will be reviewed and enhanced by REC to reduce emissions to a reasonable level. Near sensitive areas such as residential units, schools, public parks, recreational areas and ecologically sensitive areas will be monitored to ensure minimal impact associated with the construction activities.

3. REFERENCES

The content of this document has been developed to determine the minimum requirements for Ronesans Holding and all affiliated Group Companies; It has been developed according to the legal regulations of the working area, employer expectations and international standards.

The legislation and standards to be implemented in the project consist of:

- Applicable Turkish Laws and national standards
- IFC General Conditions, Health and Safety Guidelines Air Emissions and Ambient Air Quality
- IFC Performance Standard 3: Resource Efficiency and Pollution Prevention
- IFC Performance Standard 4: Community Health, Safety, and Security
- EU Council Directive 2008/50/EC (The Ambient Air Quality Directive)
- The international ambient air quality standards to be implemented by the project are those determined under the IFC General Directives (based on the World Health Organization Air Quality Guidelines 2005 and 2021) and the EU Council Directive 2008/50/EC (The Ambient Air Quality Directive).
- “EBRD Performance Standard 3: Resource Efficiency and Pollution Prevention and Control”

3.1. National Requirements

National requirements for management of this topic are set out in:

- Environmental Law No. 2872
- Regulation on Assessment and Management of Air Quality
- Industrial Air Pollution Control Regulation
- Regulation on Control of Air Pollution caused by Heating
- Regulation on Decreasing the Ozone Depleting Materials
- Regulation on Control of Exhaust Gas Emission and Quality of Petrol and Diesel
- Regulation on the Reduction in the Sulphur Content of Some Fuel Types

- Regulation on Odor Causing Emissions
- Regulation on Monitoring of Green House Gases

Ambient air quality limit values for various air pollutants defined in Turkish Regulation on Assessment and Management of Air Quality are presented in Table 1. REC and its subcontractors are responsible for reviewing relevant local legislation and requirements to capture all requirements.

Table 1. Turkish Ambient Air Quality Limit Values

Parameter	Limit Value	Duration
CO	10 mg/m^3	Maximum 8 hours daily
SO_2	350 µg/m^3	Hourly (cannot be exceeded more than 24 times a year) (for 2019-2023)
	125 µg/m^3	24 hours (for 2019-2023)
	20 µg/m^3	Yearly and winter season (October 1 - March 31)
NO_2	200 µg/m^3	Hourly (cannot be exceeded more than 18 times a year) (for 2019-2023)
	40µg/m^3	Yearly (for 2019-2023)
NO_x	30 µg/m^3	Yearly
PM10	50 µg/m^3	24 hours (cannot be exceeded more than 35 times a year) (for 2019-2023)
	40 µg/m^3	Yearly (for 2019-2023)
O_3	120 µg/m^3	Maximum 8 hours daily
Settled Dust	390 mg/m^2-day	Short term
	210 mg/m^2-day	Long term

3.2. International Standards

IFC General EHS Guideline for Air Emissions and Air Quality refers to the limit values recommended by the World Health Organization Ambient Air Quality Guidelines which are presented in Table 2. In addition, Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on Ambient Air Quality and Cleaner Air for Europe refers to the limit values which are presented in Table 2. Dust and air emissions related to construction activities shall not exceed the levels presented in the below Table 2. REC and its subcontractors are responsible for reviewing relevant international standards to capture all requirements.

Table 2. Ambient Air Quality Standards in IFC Guidelines and European Regulations

Parameter	Average Period	Air Quality Guidelines 2005 and 2021		Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on Ambient Air Quality and Cleaner Air for Europe
		General Guidelines (for human health)	Guidelines for Europe (for ecosystem)	
SO_2 (µg/m^3)	10 minutes	500 (for 10 minutes - guideline value)		

	1 hour			350 (24 allowable exceedances)
	24 hr	125 (Interim target 1)		125 (3 allowable exceedances per year)
	Yearly-winter season (Oct. 1 – March 31) (for wildlife-ecosystem)		20, forests and natural vegetation 30, agricultural crops	
NO_2 (µg/m^3)	Hourly	200 (guideline)		200 (18 allowable exceedances per year)
	Yearly	40 (guideline)	30	40
PM10 (µg/m^3)	Hourly	150 (Interim target 1)		
	24 hourly			50 (35 allowable exceedances per year)
	Yearly	70 (Interim target 1)		40

4. LINKS TO OTHER PLANS/PROCEDURES

This procedure is supported by the other plans/procedures of the Project-specific ESMS. Those of particular relevance to this procedure are as follows:

- Construction Environmental and Social Management Plan (CESMP)
- Health and Safety Plan (REC-İSG-ÇYS-KMO-PL-01)
- Community Health Safety and Security Plan (REC-İSG-ÇYS-KMO-PL-13)
- Waste Management Plan (REC-ÇYS-KMO-PL-02)
- Traffic Management Plan (REC-İSG-KMO-PL-07)
- Quarry Management Plan (REC-İSG-ÇYS-KMO-PL-08)
- Camp Management Plan (REC-İSG-ÇYS-KMO-PL-02)
- Soil Management Plan (REC-ÇYS-KMO-PL-14)
- Biodiversity Action Plan

5. ROLES AND RESPONSIBILITIES

REC Project Manager

The REC Project Manager has the overall responsibility for the implementation of the Project activities stated in this plan. They will be suitably competent and have a strong understanding of construction best practice aligned with national law and applicable Lender requirements.

REC Project Manager is accountable for overall ESHS performance and making the human and financial resources available to ensure compliance with Project ESHS requirements.

REC Construction Manager

The Construction Manager is responsible for implementation of the ESHS mitigation measures of this plan through method statements and site working practices.

Construction Manager will ensure that:

- Construction activities (undertaken by REC itself or by the subcontractors), are in compliance with the requirements of this plan and Project ESHS requirements;
- All construction staff ESHS receives appropriate safety and environmental training, prior to commencement of work;
- A thorough investigation is carried out for any accidents or incidents which may occur;
- A self-regulatory review and/or audit of implementation of this plan is carried out on a regular basis.

REC E&S and H&S Managers

E&S and H&S Managers are responsible for the following:

- Monitoring and assurance of the EPC Contractor's or subcontractor's performance against requirements of the Project and this Plan.
- Reviewing subcontractors and suppliers ESHS documentation and ensuring that they are aligned with Project ESHS requirements.
- Monitoring performance through Key Performance Indicators (KPIs), reports, audits, and meetings.
- Reporting ESHS performance to REC Project management, Nakkaş Otoyol A.Ş ESHS Management, and other related parties.
- Ensuring that all ESHS training needs are identified, provided and recorded.
- Ensuring that air quality monitoring is carried out and reported to Nakkaş Otoyol A.Ş. and the relevant authorities.

REC Community Liaison Officers (REC CLOs)

- Set-up and perform meetings on the community level.
- Be accessible to liaise with affected population upon request, especially for vulnerable groups.
- Assist affected people in issues related to the Project (answer questions about the process, delivery of grievances, information about consultation activities etc.).
- Assist within grievance management.

REC Environmental Engineer and H&S Inspector

- Conduct daily ESHS inspections.

- Conduct air quality monitoring and reporting.
- Ensure that all construction personnel (including subcontractors) working or visiting the site understand the ESHS requirements of the Project and comply fully with them.
- Make sure that the ESHS risk assessments are performed prior to the activities.
- Monitor subcontractors' ESHS performance, their compliance to the ESIA and ESHS plans.
- Report and record the ESHS accidents/incidents to H&S Supervisor.
- Monitor that all personnel (including contractors) have undergone all necessary trainings.
- Assist subcontractors and suppliers to develop and implement their site-specific plans and procedures.
- Monitor implementation of all relevant management plans and procedures, including on site.
- Track the impacts of the Project against the Project Objectives and Key Performance Indicators as defined in the Management and Monitoring Plans and work with the subcontractors where amendments to the mitigation measures are required.
- Identify breaches of management plans, recommend corrective actions.
- Stop work activities in the event of serious breaches of rules that may cause serious impacts on health and safety, environment and community or on the reputation of the Project. (All employees including sub-contractors have the obligation to intervene in case of a dangerous situation and have to report to the H&S team).

6. GENERAL RULES AND IMPLEMENTATION

In line with the mitigation measures expressed in this ESMMP, the H&S Manager will prepare a plan, which will include a requirement for monitoring of air quality and dust deposition, dust flux, real-time PM10 monitoring and visual inspections; daily on-site inspections to monitor compliance with the AQMCP will be carried out and results recorded.

6.1. General Rules to be implemented during Construction

- If there is a requirement for unpaved roads close to settlements to be used by vehicles, surface-binding agents may be used, options include salt to or gravel coat the road.
- 20kph speed limit will be applied on unpaved surfaces close to settlements.
- Vehicles will be kept clean with wheel washing and/or agitation, so that no dirt is carried on the vehicles into and out of the area.
- Where the mitigation measures such as dust suppression is inadequate, surface-binding agents will be used in exposed earthworks.
- Localized watering/dampening and activity-specific watering/dampening will be used to reduce localized dust emissions.

- Stockpiling of stripped surface material, eg. rock, sand and soil, stockpiling of unwashed materials, will be limited up to 3 meters height. Stockpiles should be kept as enclosed as possible or covered.
- Stockpiles will be placed as far away from receptors as possible.
- Design of stockpiles will be optimized to maintain a low profile without a sharp change in shapes.
- Wind breaks or dust protection systems (including sprinklers) should be built around the main construction activities where necessary and, if possible, near potentially dusty works to minimize the impact of nearby residential receptors.
- Good practice should be applied for selection of Project vehicles that meet the latest emission standards (e.g., EURO VI or US EPA Tier 3 emission standards emission standards) and maintained in a reasonable working order.
- When not in use, vehicles should be shut down unless it is due to health and safety reasons (e.g., maintenance of the air conditioner).
- During transportation on public roads, the excavated materials will be covered with nylon canvas or suitable materials with a grain size greater than 10 mm in public roads as good practice.
- All dust and air quality complaints will be recorded using grievance mechanism and root causes will be identified. Appropriate measures will be taken to reduce emissions in a timely manner.
- The head or regional office contact information and name and contact details of person(s) accountable for air quality and dust issues on the site boundary will be displayed at locations where there are dust generating construction activities are conducted.
- Daily on-site and off-site inspection will be carried out where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the inspection log available to the local authority when asked.
- The frequency of site inspections by the person(s) accountable for air quality and dust issues on site will be increased when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- Real-time PM10 continuous monitoring locations will be agreed with the Local Authority. Real time PM10 monitors should be fitted with an alarm system, to alert the Environmental Manager of a risk of exceedance of national standards.
- Solid screens or barriers will be erected around dusty activities or the site boundary during excavation works.
- The site or specific operations where there is a high potential for dust production and the site is active for an extensive period will be fully enclosed.
- Reduced speed limits will be implemented on unsurfaced haul roads and work areas will be imposed and signposted (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate). Standard speed limits on roads

will be 20kph with potential to reduce to 10kph during periods of high risk of exceedance of AQ standards.

- Only cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems, will be used.
- Enclosed chutes and conveyors and covered skips will be used.
- Drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment will be minimised and fine water sprays will be used on such equipment wherever appropriate.
- Equipment will be readily available on site to clean any dry spillages, and spillages will be cleaned up as soon as reasonably practicable after the event using wet cleaning methods.
- Inside buildings will be soft stripped before demolition (walls and windows will be retained in the rest of the building where possible, to provide a screen against dust).
- Earthworks and exposed areas/soil stockpiles will be re-vegetated to stabilise surfaces as soon as practicable.
- Hessian, mulches or tackifiers will be used where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
- Only the cover in small areas during work will be removed and not all at once.
- Sand and other aggregates will be stored in bunded areas and will not be allowed to dry out, unless this is required for a particular process, in which case it will be ensured that appropriate additional control measures are in place.
- Bulk cement and other fine powder materials will be delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
- For smaller supplies of fine power materials, the EPC contractor will ensure that bags are sealed after use and stored appropriately to prevent dust.
- Scabbling (roughening of concrete surfaces) will be avoided if possible. Vehicles entering and leaving sites will be covered to prevent escape of materials during transport.
- On-site haul routes will be inspected for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- All inspections of haul routes and any subsequent action will be recorded in a site logbook.
- A wheel washing system with pool or water jet (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where there are receptors within 100m of the site access) will be implemented.
- The EPC contractor will ensure that there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.

- Access gates will be located at least 10 m from receptors where possible.
- The EPC contractor will ensure that all on-road vehicles comply with the applicable emissions standards.
- Grid electricity or battery powered equipment will be used where practicable
- The manufacturer-recommended engine maintenance programs will be implemented by the fleet owners / operators.

GHG specific emissions

- Design optimization to reflect the carbon reduction hierarchy should be considered.
  - Reduce the elements required for the Project.
  - Reduce the requirement for construction materials and excavation.
  - Substitute construction elements for lower-carbon alternatives (e.g., specifying concrete with a higher portion of ground-granulated blast furnace slag (GGBS) content which is widely available in Turkey); and
  - Use efficient construction processes, such as design for manufacture and assembly.
- Materials and products with reduced embodied GHG emissions including through material substitution, recycled or secondary content and from renewable sources will be specified.
- Energy consumption including fuel usage by, for example, reducing the requirement for earth movements to/from and within the construction site will be minimised;
- The local sourcing of materials and local waste management facilities will be maximized.
- The Project with a view to maximizing the potential for reuse and recycling of materials/elements at the end-of-life stage will be specified and constructed; and
- High efficiency mechanical and electrical equipment will be specified and constructed.
- Refuelling will be done from authorized fuel stations.
- Transport logistics (locations/routes) will be optimized to ensure efficient carriage of raw materials and promote fuel efficiency
- Vehicle idling times will be reduced through focus on scheduling of construction operations.
- The use of fuel-efficient transportation vehicles will be prioritized, and regular maintenance of vehicles ensured.
- The timing for works implementation (Traffic management) will be optimized to minimize traffic delays due to rehabilitation, widening or maintenance work zones on existing road sections.
- Energy efficiency specifications for new and retrofitted site accommodation will be created.
- Sourcing renewable energy will be considered if feasible.
- Energy efficiency usage among workers will be promoted.

Table 3- Fuel Usage Track Table

Date	Time	Kilometre	Vehicle Type	Amount of Fuel

6.2. Commitment

REC commits to review site management and implement suitable additional mitigation measures if monitoring show exceedances of Project standards for dust deposition, PM_{10} and/or PM2.5, or if complaints regarding dust mobilization / settlement are received.

Ongoing stakeholder engagement will include consultation with authorities, local communities and any other relevant stakeholders with regard to Air Quality Management during construction phase. Any grievances received from stakeholders will be managed in accordance with Grievance Mechanism as detailed in Project SEP.

7. TRAINING

All the staff will be inducted regarding sources of air emissions and dust, air quality degradation and their impact on human health and the required mitigation measures applicable to their roles and activities in the project (e.g., PPE, proper vehicle maintenance, etc.). Additionally, personnel involved in the air quality monitoring shall receive specific training to perform their tasks appropriately and according to the applicable requirements.

Furthermore, training guidelines and requirements in terms of training management, identification of training needs, ESHS topics to address, etc., expounded in the CESMP shall be followed and implemented.

8. MONITORING, ASSURANCE AND VERIFICATION

All dust and air quality complaints will be recorded by the Contractor and causes identified. Appropriate remedial action will be taken in a timely manner with a record kept of actions taken including of any additional measures put in-place to avoid reoccurrence. The complaints log will be made available for the authorities (i.e., Provincial Directorate of Urbanization, Environment and Climate Change). Any exceptional incidents that cause dust and/or air emissions, either on or offsite will also be recorded, and corresponding action taken to resolve the situation recorded in the logbook.

Regular liaison meetings with other high-risk construction sites within 500m of the Project boundary should be held, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/ deliveries which might be using the same strategic road network routes.

- Periodic visual inspections of activities resulting in impact to air quality. Visual inspections will reflect the ethos of 'see it, own it', in terms of identifying and addressing significant air quality impacts. Where significant impacts are observed, these will be recorded and closed out.
- Regular inspections during the site preparation phase to review air and dust issues and dust suppression techniques altered as required.

Method Statement

Dust monitoring will primarily be addressed through site inspection to ensure that good site practice with respect to dust control is being effectively implemented on site. Dust sampling is not considered to be an effective means of monitoring dust during construction due to the delay between sampling and the receipt of sampling results. More immediate real time means of identifying unacceptable levels of dust, such as visual observation, is required so that remedial measures can be implemented immediately. At high risk locations i.e. where there are residential properties within 100 m of works, visual inspections will be supplemented by real time monitoring for PM10, with an instrument equipped with an alarm facility. This should be set to a 15 minute concentration of 250µg/m^3 as an alert threshold. Monitoring should be undertaken at the site boundary and at a background location i.e. more than 350m from works. This will enable separation of impacts from works emissions and regional impacts. REC Environmental Engineer will assess on a daily basis the level of dust generation and real time alarms during construction activities at the RoW, access roads, camp site, general facilities and all temporary facilities. Mitigation measures will be implemented as required immediately. If there is a complaint from the sensitive receptors about the dust generation, then dust measurement will be conducted. Dust monitoring samples will be taken at sensitive receptors' locations according to the ESIA requirements. The relevant legislation and the international standard to use for compliance check will be:

- Ambient Air Quality Limits of Turkish Regulation Quality Assessment and Management
- WHO Ambient Air Quality Guidelines- IFC General EHS Guidelines: Environmental Air Emissions and Ambient Air Quality – General Guidelines for Human Health

9. KEY PERFORMANCE INDICATORS

Following Key Performance Indicators (KPIs) will be monitored, verified and evaluated by the relevant parties in accordance with their responsibilities set forth in the REC-İSG-ÇYS-KMO-PR-09 HSE Monitoring, Assurance and Verification Procedure.

Table 4- Key Performance Indicators

KPI	Measurement	Target	Frequency
Grievances received related with air quality	Number	100% closed or responded to within 30 days	Monthly
Real time PM10 monitoring in place	Percentage	100%	Realtime
All employees have received air quality training in place	Percentage	100%	Monthly

Vehicle maintenance records in place	Percentage	100%	Monthly
Dust suppression programme in place to prevent dust formation.	Percentage	100%	Weekly

10. AIR QUALITY MONITORING

As it was mentioned in previous sections, air emissions of project will occur from construction activities. Significant pollutant of this step will be dust generated from earthwork activities and the release of engine emissions (such as NOX, SOX, particles, CO, VOC etc.) from construction equipment and vehicles.

Daily on-site and off-site inspections will be undertaken, where receptors (including roads) are nearby to monitor dust. The inspection results will be recorded and made available to authorities when requested. This will include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100m of site boundary, with cleaning to be provided if necessary. Inspections will cover emissions from construction plant to ensure no visible exhaust emissions.

Regular site inspections to monitor compliance with the AQECP will be carried out, inspection results recorded, and an inspection log made available.

The frequency of site inspections will be increased when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.

Real-time PM_{10} monitoring locations will be identified before construction works started at that location.

PM_{10} monitoring will be focused around areas with multiple sensitive receptors within close proximity to the works. Dust and particulate monitoring will also provide information which would be used to reduce dust exposure of the health of construction workers in the event of an exceedance of the Project Standards.

Any grievances arise 2 km of outside of the air quality area of influence (which is defined in ESIA Chapter 4.3), a monitoring campaign will be conducted continuously. Within the scope of this campaign, apart from the grievance point, another control point will also be identified which will be irrelevant for the project to make the control measurements. The altitude and geographic extend of this control point will be similar to the grievance point. This campaign will be conducted since the grievance is closed.

Table 5- Air Quality Monitoring present the summary of the air quality monitoring to be carried out during construction phase.

Table 5- Air Quality Monitoring

Parameter/ Aspect	Location	Frequency/Timing	Threshold level[1] (if applicable)	Trigger for Monitoring
Construction Phase: Visual inspections of dust generation and dust suppression controls	Project sites and impacted third party sites, such as adjacent receptors or along site access routes	Daily or more frequently during high risk, dry and windy conditions.	N/A	High-risk activities with potential to cause dust nuisance including, but not limited to construction traffic on unsealed access roads, construction sites adjacent to sensitive receptors. Visible wind-blown dust leaving site boundary or dust deposition observed on street furniture or at sensitive receptors. Any complaints received from third parties.
Construction Phase: Emissions from stationary/non-stationary sources	Project site	Daily	*	Visible black smoke from machinery or vehicle exhausts at any point during operation, not including initial start up
Construction Phase: Real-time PM10 continuous monitoring locations will be agreed with the Local Authority.	Project site	Daily	150 (Interim target 1 - Hourly)	High-risk activities with potential to cause dust nuisance to sensitive receptors.

[1] Unless not specified otherwise in permits/licenses, whichever of EU, IFC ESHS Guidelines and national threshold levels is most stringent, applies.

11. REPORTING REQUIREMENTS

The following reporting requirements apply for the EPC Contractor:

- Biannual reports on KPIs and performance trends;
- Monthly reports of relevant training activities completed and attendance registers to be maintained;
- Daily/Weekly/Monthly reports of site inspection and monitoring activities;
- Audit reports;
- Inspection logs and status of non-compliances.

In addition, the following external reporting will be done:

- Monthly and biannual ESHS reports on KPIs and performance trends will be submitted to Nakkaş Otoyol A.Ş.;
- Incident notification and reporting to relevant Turkish regulatory bodies will be performed in line with applicable legislation in force and as stipulated in permits and licenses.
- The Lenders will be notified of incidents pursuant to the terms and conditions agreed upon in the Finance Agreements.

APPENDIX

Appendix – Baseline Air Quality Assessment

Air quality measurements were conducted by the ESIA team between February to June 2021. Locations of the air quality baseline measurements (see **Figure 1**) were selected by air quality experts based on a site visit of the Project route and surroundings to ensure appropriate representation of the features in the area.

Air quality baseline data collection within the scope of the ESIA study covered the following measurements:

- NO2, SO2, VOC, BTEX for 60-days (with two 30-day periods) at 12 locations;
- PM10 and PM2.5 for 30 days (one period) at 12 locations;
- Dust deposition for 60-days (with two 30-day periods) at 12 locations

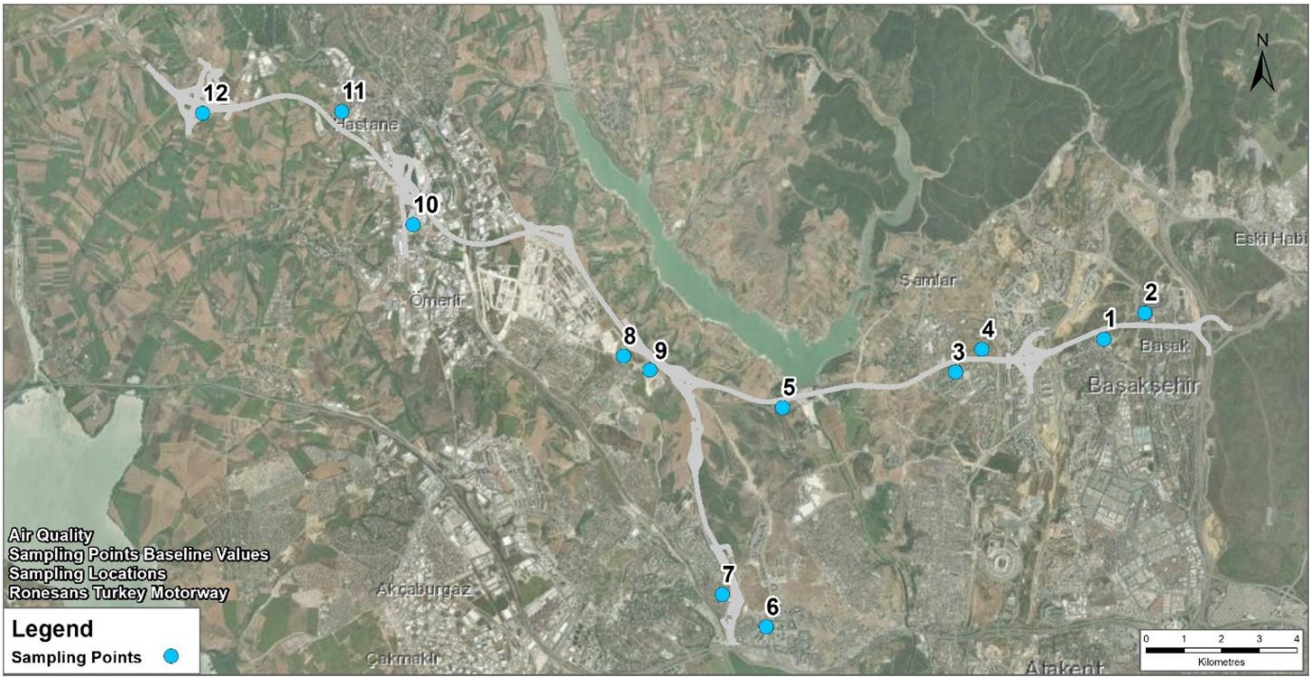


Figure 1 Air Quality Measurement Locations Along the Project Route

Air Quality Features of the Project Area

Baseline monitoring for NO_2, PM_{10} and $PM_{2.5}$ was conducted as part of the ESIA assignment along the length of the Motorway at 12 locations. The data is summarised in Table 1 and Figures 2, which show the 15 locations colour coded to indicate the concentrations in relation to the air quality standards.

These results show the average background emissions of each point and represent the air quality of the sampling airshed.

Table 1 Baseline values for NO_2, PM_{10}, and $PM_{2.5}$

Location (Site #)	NO_2 Annual Baseline Concentrations µg/m³	NO_2 Hourly Baseline Concentrations µg/m³ **	PM_{10} Annual Baseline Concentrations µg/m³	PM_{10} 24 Hour Baseline Concentrations µg/m³ **	$PM_{2.5}$ Annual Baseline Concentrations µg/m³
AQS	**40**	**200**	**40**	**50**	**25**
1	32.9	65.8	53.5*	106.9*	20.1
2	28.6	57.2	38.4	76.8*	14.9
3	28.8	57.6	39.3	78.6*	13.3
4	34.6	69.2	41.7*	83.3*	14.3
5	22.9	45.8	32.3	64.5*	12.7
6	38.4	76.8	45.8*	91.6*	16.4
7	13.9	27.8	27.7	55.4*	10.4
8	23.2	46.4	37.2	74.3*	12.9
9	23.2	46.4	58.6*	117.3*	21.3
10	39.7	79.4	64.2*	128.4*	22.7
11	30	60	37.3	74.6*	13.0
12	26.6	53.2	50.6*	101.3*	16.3
Average across whole Project area	27.6	55.2	41.6*	83.1	14.8

*Value exceeds AQS

**Calculate from long term mean

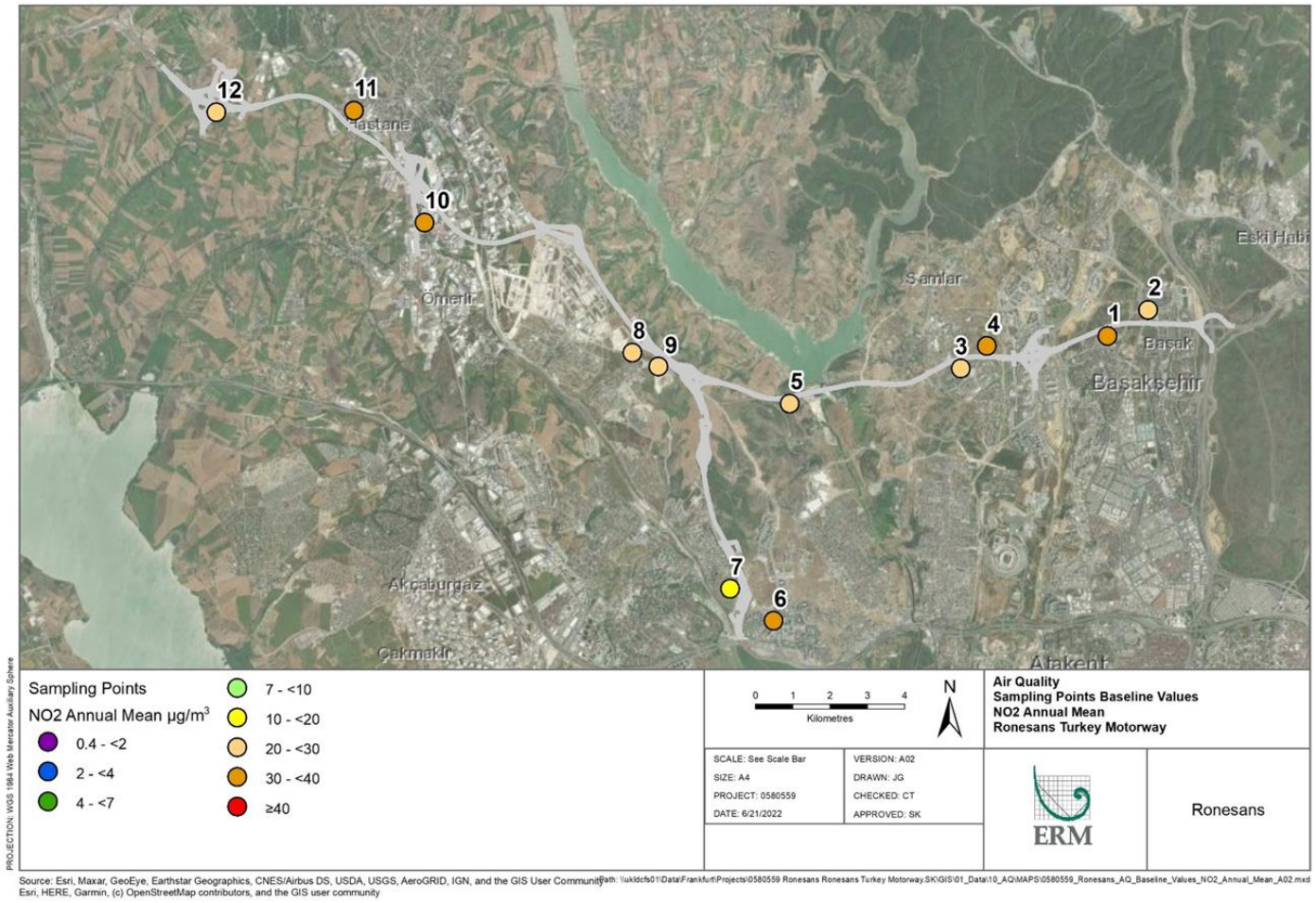


Figure 2 NO_2 Annual Mean Baseline

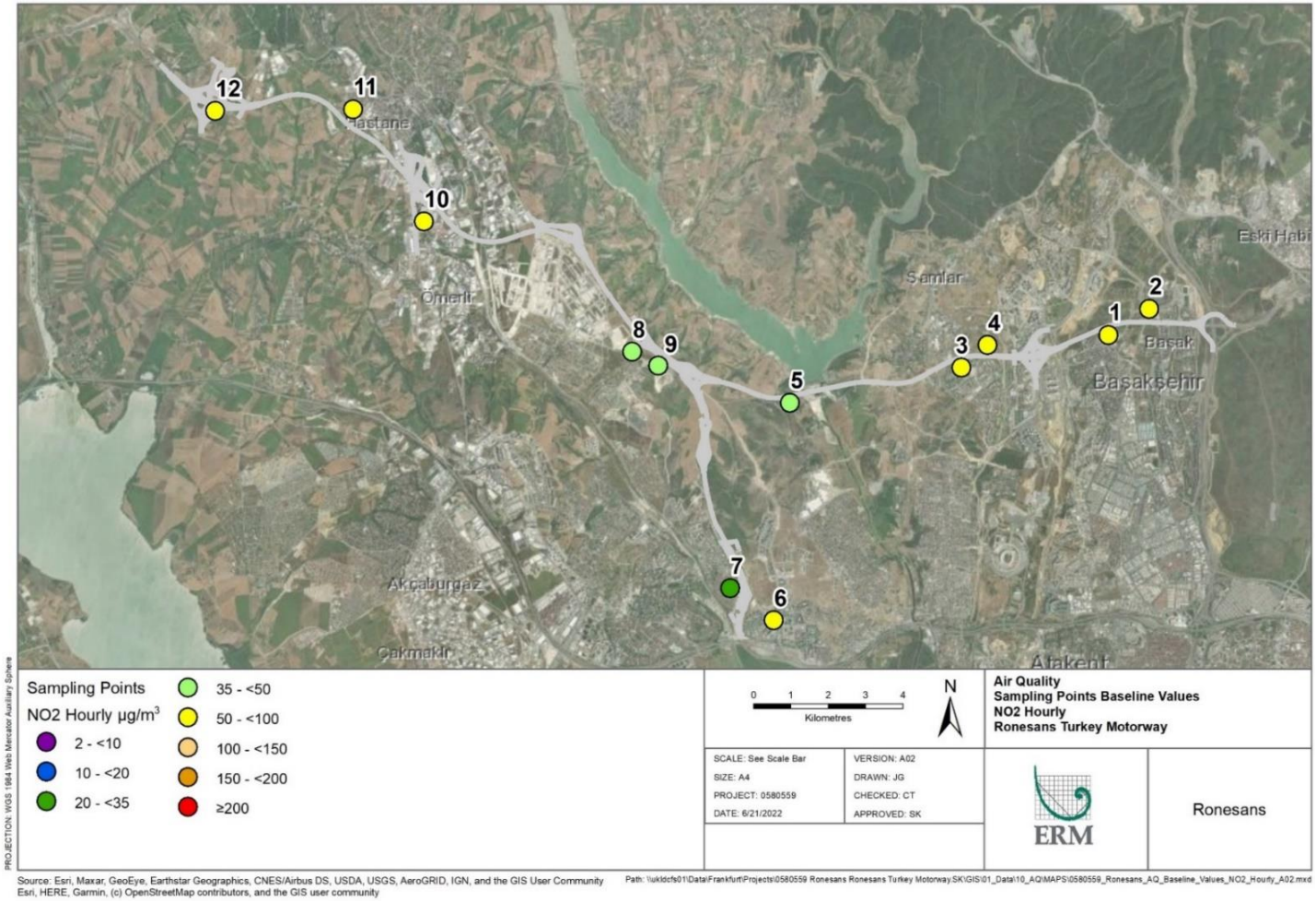


Figure 3 NO_2 Hourly Baseline

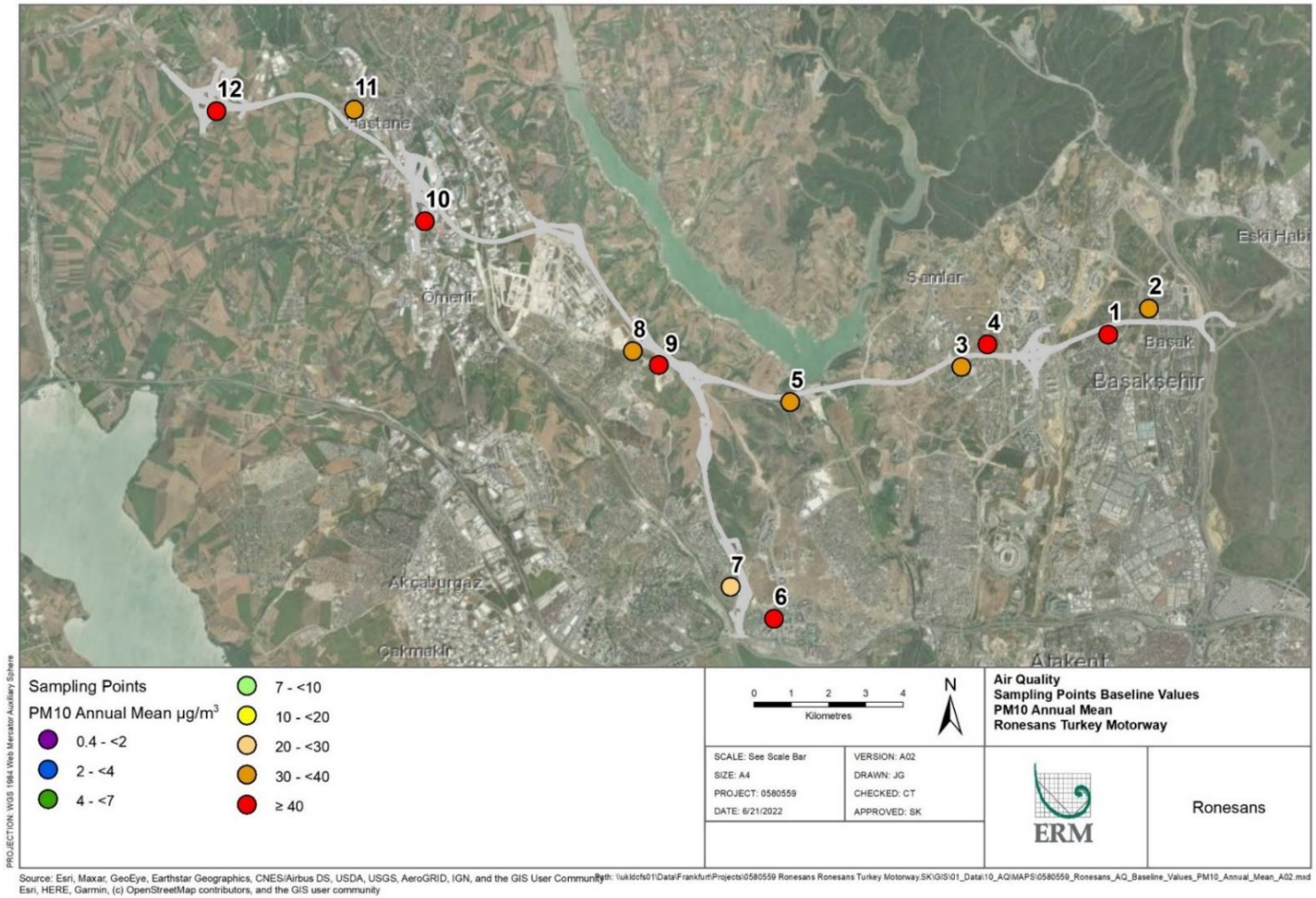


Figure 4 PM_{10} Annual Mean Baseline

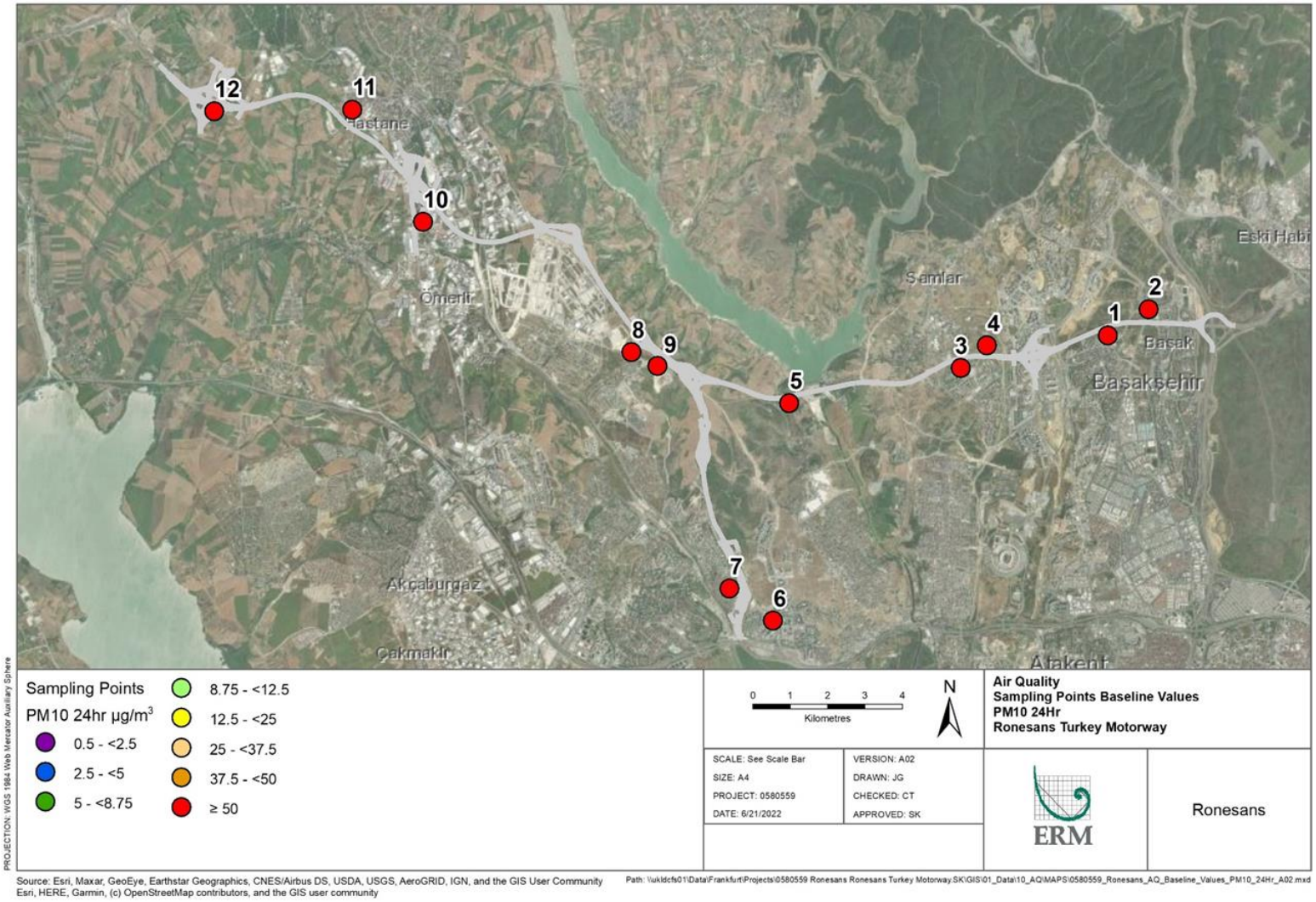


Figure 5 PM_{10} 24 Hour Baseline

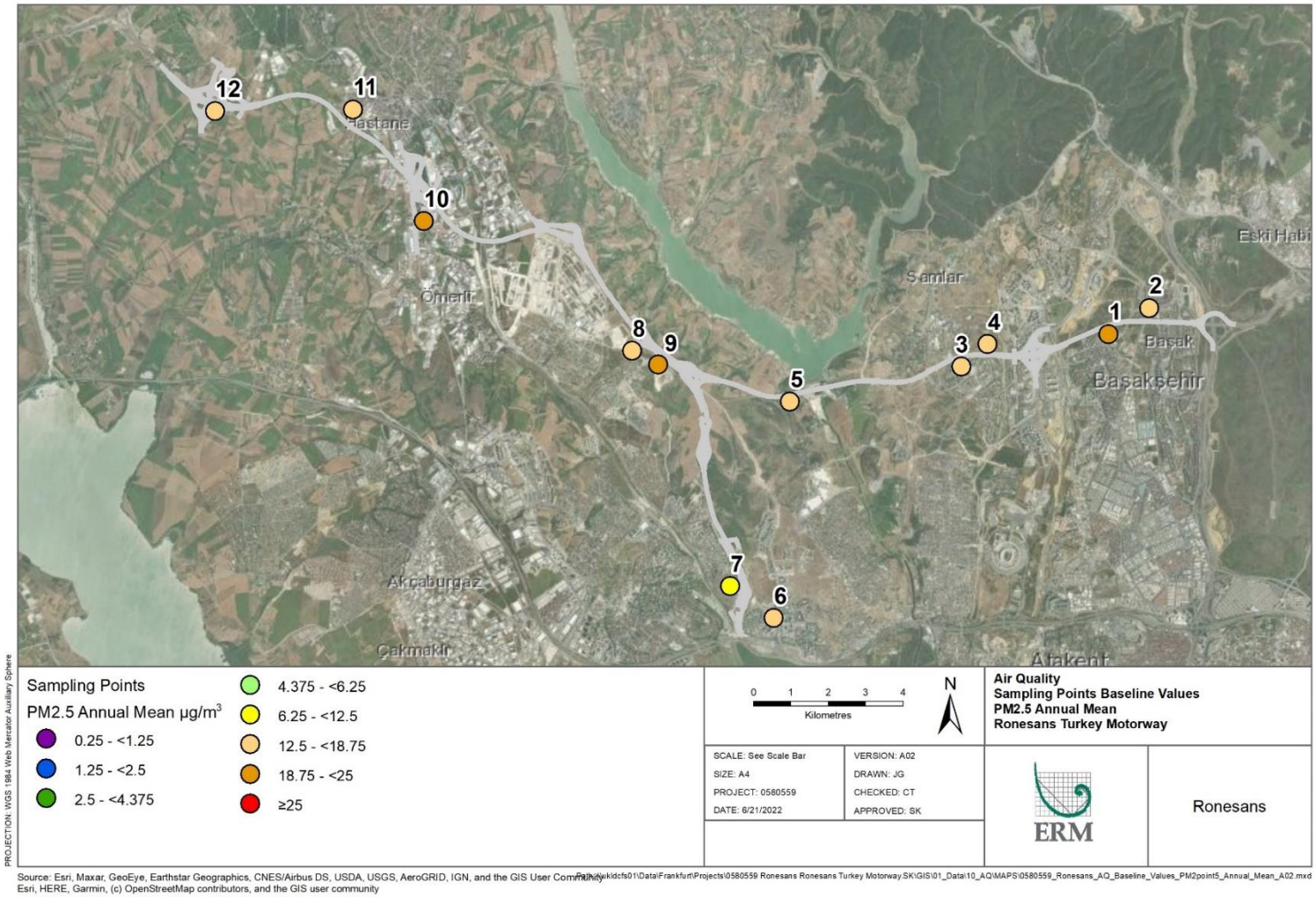


Figure 6 $PM_{2.5}$ Annual Baseline