



- Riyadh, Saudia Arabia
- YOB: 1976
- Nationality: Syrian & French

Competencies:

Creating and Executing sustainability plans for fostering sustainability in the Land transport sectors through:

- Carbon Footprint Analysis Calculation of transportation emissions according to GHG protocol
- Environmental management of Utilities, Green buildings, and Facility management in Rail and Urban Transport.
- ISO14064 GHG Reporting & Removal
- LEED Green Associate (on progress)
- GHG Protocol & Lead Auditor ISO45001&14001
- Environmental Impact Assessment (EIA)

Membership

- Member of the French Railway Association of Engineers and Managers (AFFI) – since 2019
- Member of the Order of Engineers of Syria since 2000 - Engineer-in-office function (2008)

Personal Summary

An experienced consultant in Sustainable Transport and Environmental Compliance with over 20 years of expertise in designing and implementing innovative transport solutions for emerging Countries, particularly across the MENA region and European Union. I have successfully bridged gaps in sustainability and environmental compliance by proposing and executing actionable strategies for public transport systems, fostering alignment with international frameworks such as the UN Sustainable Development Goals (SDGs).

My professional background includes conducting comprehensive analyses of urban and regional transport challenges, preparing detailed strategic plans, and leading feasibility studies for urban and railway systems at national and regional levels

I have collaborated with prominent organizations, including UNDP, ESCWA, World Bank, and EU, leveraging my familiarity with international policies and regulations such as those of AFD, JICA, and EU-funded projects, to deliver impactful solutions that advance economic prosperity and environmental goals.

Area of Strengths

- **Sustainable Transport Expertise:** Over than 20 years in designing multimodal transport systems and strategies to enhance regional connectivity and economic growth.
- **Environmental Compliance:** Skilled in EIA, Carbon Footprint Analysis, and sustainability KPIs aligned with international standards like the GHG Protocol.
- **Rail and Sustainable Transport Systems:** Proven expertise in planning and developing advanced railway systems, including tramways, subways, rail freight, and TGV, with a strong focus on compliance with European standards and best practices.
- **Global Collaboration:** Extensive experience working with UNDP, ESCWA, World Bank, and EU on sustainable transport initiatives.
- **Technical Proficiency:** Advanced skills in tools like VISUM, GIS, and BIM for transport planning and analysis.
- **Sustainable Practices:** Advocate for non-motorized mobility, soft mobility strategies, and green technologies in public transport.
- **Multilingual Communication:** Fluent in Arabic, English, and French, enabling seamless stakeholder engagement.
- **Policy Development:** Proven ability to formulate transport policies aligned with UN SDGs and international frameworks.
- **Environmental management of transport systems,** green buildings, and facilities to enhance sustainability. Promoting sustainable practices in collective transit, non-motorized mobility, and transitioning to greener transport systems.

Education

Institution	Degree(s) or Diploma(s) obtained:
Ecole Nationale des Ponts - Paris Tech, ENPC. Paris, France. (2019-2020)	Advanced Masters in Railway and Urban Transport System Engineering - Qualification listed RNCP Level 1 International Expert in Rail and Urban Transport Systems
University Paris-Est/ Ecole Nationale des Ponts et chaussées, Paris (ENPC). (2004-2008)	Ph.D. in Civil Engineering; Urban and Rail Infrastructure (Planning, Design & Construction)
University of MLV, in collaboration with (ENPC), Paris, France. (2003-2004)	Master of Science, DEA (Diplôme d'Etudes Approfondies), Mechanics of Solids, Materials and Structures / Option: Mechanics and Structures.
Damascus University, Faculty of Civil Engineering, Damascus, Syria (2000-2001)	Diploma in Superior Studies, DES: (Diplôme d'Etudes Supérieures) Transport and Infrastructure Engineering
Damascus University, Faculty of Civil Engineering, Damascus, Syria (1995-2000)	Bachelor's degree in civil engineering, Transportation & Communication

Language

- Arabic : Native
- English: Fluent
- French: Fluent

Computer Skills

- Visual basic, Matlab – CESAR Lcpc
Microsoft Office, AutoCAD
- BIM with InfraWorks, Google Earth Pro and
CIVIL3D.
- MS Project, Primavera
- Arc GIS/ GIS Pro, VISUM, Origin 7

Training

- Big cities and sustainable development,
ENA Ecole Nationale d'Administration,
Paris, France, 2012
- Financial and economic cost-benefit
analysis for transportation projects,
National Institute of Transportation,
Cairo, Egypt, 2011
- Creation the strategic plan & KPIs for
Land Transport Company, in Syrian -
Jordanian land transports company,
Amman, Jordan, 2010
- Construction and setting up of transport
foundations using the BOT and PPP
system -National Institute of
Transportation, Cairo, Egypt. 2009

Book or chapter

Karraz K., Bonnet G., Dupla J.C., Canou J., Mechanical behavior of ballast under monotonic and cyclic loading, in « advanced characterization of pavement and soil engineering materials », pp. 1874-1856, ed. by Loizos, Scarpas and Al Qadi, Taylor & Francis (06/2007). ISBN 0415448824.

Current Employment

Land Transport Environment & Sustainability Expert

Bureau VERITAS- National Center for Environmental Compliance (NCEC)
(2024-Present) Saudi Arabia



Environmental Performance Assessment Project for Land Transport and Logistics Sectors across KSA

- Objective:** Align Saudi Arabia's transport and logistics sectors with international environmental standards and Vision 2030 goals.
- Environmental Impact Assessment:** Evaluated urban and rail systems, identifying solutions to reduce emissions.
- Data Analysis:** Collected, analyzed, and coordinated data with authorities to meet global standards.
- Strategic Planning:** Develop a national compliance plan with monitoring mechanisms for long-term sustainability.

Ref. Eng. Elias Fahd: elias.fahd@bureauveritas.com; BIO Manager Bureau Veritas Saudi Arabia

Professional experiences:

Railway Infrastructure Engineer

RATP Paris Metro (2021-2023) France



Main adaptation plan for metro line infrastructure as part of the arrival of MF19 Rolling stock.

- Propose guidelines for the capitalization of program design studies
- Adapt rolling stock maintenance centers and maintenance workshops

Ref. Guillaume Le Mandat: guillaume.le-mandat@ratp.fr – RATP Infrastructure - Head of the Projects Management unit

Senior Transport Expert

SISSAF Project funded by the European Union, TMS consultant.
(2014 -2019) Lebanon



Comprehensive Sector Policy and Strategy for the Lebanese Land Transport Sector:

- Preparation the Strategy of Land Transport Sector to strengthening of the Institutional Capacity and Capacity building of the Sector, and support and enhance multimodal transport sectors in Lebanon.
- Assessment of Strategic Role Tripoli-Syrian Border Railway Project:**
Based on the analysis of the current situation as well as the identification of flows distribution and the spatial coverage of the rail system.
- Creation the general Guidelines for BRT (BHNS) and Dedicated Busway:**
Comparison study (American and French standards), to introduce current concepts and ideas on the BRT.

Ref. Xanthakos Georgios: gexanth@yahoo.gr - Transport Key Expert: Mott MacDonald Romania SRL

Senior Transport Researcher

Ecole Centrale de Nantes
(2013 -2014) France



Analysis of railway infrastructure behavior. Evaluation of impacts on specific loads and optimization of concept design for heavy loads (analyzing big data and modeling).

Ref. Prof. Guy BONNET, Professor at Paris-Est University MLV-, guy.bonnet@univ-paris-est.fr

K, Karraz et al.;

1- A Comprehensive Analysis of Turnout, Switching, and Nonlinear Control Technique to Enhance Safety, Efficiency, and Capacity in Hyperloop».

IEEE, Access, 153127-153145, 2024, 10.1109/IEECESS3472857, SN - 2169-3536, VO- 12, VL - 12.

2- MECHANICALE BEHAVIOUR OF MICROBALLAST

UNDER MONOTONIC AND CYCLE TRIAXIAL LOADINGS

International Workshop; Railway Track, Ballast:

Issues and Challenges – UIC – FRANCE -2013.

3- Khaldoun KARRAZ, Adopted Measures in Syrian Arab Republic for Reducing Transport Sector Emissions,

Expert Group Meeting on "Promoting Emissions Reductions in the Transport Sectors", UNESCWA, LEBANON 2011

4- Comportement irréversible des matériaux granulaires des plateformes ferroviaires soumises aux charges uniformes et répétées »

Paper ID No. 1053, 14th Pan-American Conference on Soil Mechanics & 64th Canadian Geotechnical Conf, CANADA - 2011.

5- COMPORTEMENT D'UN MICRO – BALLAST AUX GRANDS NOMBRES DE CYCLES »,

journée CFMS : géotechnique ferroviaire CNAM de Paris FRANCE - 2009

6- Dispositif triaxial dynamique de grande taille pour sols,

Journées Nationales de Géotech, JNGG'08 FRANCE 2008

7- Influence of Sample Size on Mechanical Behaviour of Granular Materials, 60th Canadian Geotechnical Conf, CANADA-2007.

8- COMPORTEMENT CYCLIQUE A LONG TERME DE MATÉRIAUX DE BALLAST,

Conference on Advanced Characterization of Pavement and Soil Engineering Materials –GRECE 2007

9- Détermination des propriétés cyclique et dynamique du ballast et la modélisation de structures par approche continue, Colloque Matériaux Granulaires ENPC- FRANCE - 2007.

10- Procedures to propose costly transport projects with BOT, Demonstration with French highways expertise.

3rd Jordan International Transportation Conf; Decision Making in the Transport Sector, Amman Jordan, March 2007.

Professional experiences:**Head of department - Director General**

Ministry of Transport
(2009-2013) Syria

**Department of transportation studies, research & Environmental Affairs.**

- Team leader of several studies and national projects including feasibility analysis, environmental impact, sustainable urban mobility policy, traffic analysis & surveys, coordination with stakeholders and elaboration of implementation plans.
- Monitoring and completion of several studies (transformation and adapting new technology ITS): CNG bus, The Syrian railway network development, Hybrid and Electrical vehicles, GPS, BRT-express Ultra-low-cost, design Tramway and underground...). With the preparation of tender dossiers and Impact assessment of transport projects.

Ref. Minister former, Regional advisor on transport, UN -Escwa - Lebanon, Dr. Yarob Badr, badr3@un.org.

National expert & coordinator of Syrian committee for Damas Métro**Supervision & Monitoring of feasibility study of Damascus subway (Metro) - SYSTRA (France):**

Follow-up of tasks completion, evaluation of scenarios and validation of proposed scenarios paths of Metro line. Verification of traceability (longitudinal section and cross-section) in accordance with adopted standards, regulation, and TOR. Validation of reports: Project Management Plan and Environmental Assessment Scoping Procurement Strategy: Alternative alignments study

Syrian National Expert,**Centre for Transportation Studies for the W-Mediterranean (CETMO) - Barcelona EU**

In charge of traffic modeling of goods and passengers' routes; for main corridors between Europe, Middle East and the Gulf countries. Flows analysis, routes evaluation, and proposal of adequate scenarios which could serve regional and Mediterranean integration. RTAP -Action 18.

Master Plan of Damascus City and its vital surrounding:

The main responsibilities are:

- Supervision & Monitoring of field surveys (traffic, road network, and public transport).
- Validation of traffic modelling results done using Emme, analyzing several simulations and making sensitivity tests.

QANTARAIL Project, National Expert,

The main assigned tasks were related to database analysis and to traffic modelling: reconstitution of sustainable urban mobility by situation of 2008 on the Syrian rail-network for two horizons (2015- 2025)

Rail-Infrastructure Engineer

SNC Lavalin
(2008-2009) France



SNC • LAVALIN

Projects: Orleans Tramway and Rack-rail Puy de Dome – France

- Conducting reliability study linking between road and rail: the construction of rail over road:
- Validation of geotechnical infrastructure study and verify compliance with the contractual TOR
- Validation of traceability (longitudinal cross-section) in accordance with regulations & standards

Teaching – Professor assistance :

Ecole Nationale des Ponts et Chaussées (ENPC)
(2004-2008) France



École des Ponts
ParisTech

Responsible of experimental module-the cyclic and monotonic triaxial test

- Instructor for laboratory sessions in mechanic of soils. Lecturer at ENPC.

Ref. Prof. Guy BONNET - guy.bonnet@u-pem.fr