

CURRICULUM VITAE

1. **Proposed Position:** Infrastructure Economist and Development Finance Specialist
2. **Name of Firm:**
3. **Name of Expert:** Frederick Walter COLBOURNE
4. **Current Residential Address:** 22-2-2 Cantonment Road, Georgetown, Penang, Malaysia
Telephone: +60 4 226 9720.
E-Mail Address: FredColbourne@gmail.com
5. **Place of Birth:** Toronto **Citizenship:** Canada / UK (dual citizenship)
6. **Education:**
M.S., Earth Science Department, Emporia State U. (Kansas) 2005
Graduate Certificate in Geospatial Analysis/GIS, Emporia State U
M.A. Miami University Economic Geography (Ohio, USA)
B.A. University of Western Ontario (Canada)
7. **Membership in Professional Associations:**
International Consulting Economist Association (ICEA, UK)
8. **Academic/Government**
 - **Senior Research Officer:** Management Research Division (Operational Research), Economics Department, London School of Economics.
Post Office OR Project, Team Leader: Developed computer model of work content in postal routes for computer division of UK Post Office.
 - **Lecturer:** Quantitative Methods for the MSc course in Urban & Regional Planning, London School of Economics
Conducted weekly seminar: *Statistics and Modeling for Urban and Regional Planning*
 - **Canada Scholar:** PhD candidate, London School of Economics, Regional and Urban Development: *A Computer Model for Planning the Location of Shopping Centres in Greater London* (dissertation incomplete)
 - **Greater London Council:** Planning Department, Survey and Research. Senior Professional Officer
 - **UK Government:** Commission for London Airport, Principal Scientist (Operational Research)
9. **Countries of Work Experience:** Bangladesh, Canada, Cambodia, China (Hong Kong SAR), Egypt, El Salvador, Indonesia, Kyrgyz Republic, Malawi, Malaysia, Nepal, Nigeria, Oman, Pakistan, Paraguay, Sri Lanka, Syria, Timor Leste, UK
10. **Languages:** English (native), Indonesian (good), French (fair), Spanish (fair), Egyptian Arabic (poor)
11. **Employment Record:**

From: 2012 – Present
Employer: Independent consultant
Position Held: Infrastructure Economist, Development Finance Specialist, PPP Specialist

From: 2012 (March-June)
Employer: GHK Consulting Limited
Position Held: Utility Financial Specialist, Tariff and Regulatory Adviser

From: 2011 -2012
Employer: Independent consultant
Position Held: Accounting software consultant to private sector investors.

From: 2010 - 2011
Employer: WYG International
Position Held: Financial Management Specialist; Programme/Project Development Manager for urban environment project in Syria.

From: 1997 - 2010
Employer: Self employed on long- and short-term contracts / seconded by Millennium Development Consultants Ltd
Position Held: Independent consultant in the field of development economics, finance and public-private partnerships

From: 1989 - 1997
Employer: Seconded by Economic Development Consultants Limited to DHV Consultants, Netherlands/Indonesia
Position Held: Urban Economics Consultant & Municipal Financial Analyst

Frederick Colbourne (fredcolbourne@gmail.com)

From: 1987 - 1989

Employer: Louis Berger International, USA / Indonesia (fixed contract)

Position Held: Urban Economics Consultant & Municipal Financial Analyst

From: 1980 – 1987

Employer: Seconded on short-term contracts by Economic Development Consultants Ltd (EDCL)

Position Held: Director of EDCL

From: 1978 – 1980

Employer: World Bank Secondment Staff (fixed contract)

Position Held: Regional Economic Development Adviser

From: 1974 – 1978

Employer: Economic Consultants Limited, UK (later acquired by Price-Waterhouse UK)

Position Held: Associate Director & Senior Economist

From: 1972 – 1974

Employer: Cooper and Lybrand, Economic Services (later merged with Price-Waterhouse)

Position Held: Senior Economist

From: 1971 – 1972

Employer: International Civil Aviation Organization (ICAO), Montreal

Position Held: Senior Transport Economist

12. Detailed tasks assigned	13. Work Undertaken that Best Illustrates Capability to Handle the Tasks Assigned
<p>Project Finance Specialist</p>	<p>Name of assignment or project: Five-Year Review of Contract Payment to the Operator in a Public Private Partnership for Operation of Wastewater and Septage Treatment Plant. Year: 2018 Location: Hong Kong SAR, China Client: Atal-Suez Joint Venture Main project features: Review of payment provisions in PPP contract between GoHK and Atal-Suez, the operator of a wastewater and septage treatment facility. Activities performed: Support to the private-sector partner in reviewing payment provisions for the operation and maintenance phase of a Design-Build-Operate project (DBO). Fact-Finding Mission to develop a methodology. Reviewed PPP literature for operation phase of (DBO). Participated in workshops with Atal-Suez senior staff to review technical, financial and legal aspects of operations phase of DBO. Proposed a methodology based on a conventional financial-economic model. Presented findings and recommendations to staff and senior management of Atal-Suez and followed up with a Fact-Finding Report.</p> <p>Name of assignment or project: Sustainable Infrastructure Assistance Program. Year: 2017 Location: Jakarta; Home office: Penang, Malaysia Client: CARDNO, Australia, consultant to the National Planning Board; ADB TA Main project features: Improving Multimodal Connectivity to Support Integrated Land and Sea Toll-way Positions held: Financial Specialist Activities performed: Supported port and land-based Plan, including, subproject identification, scope and prioritization based on consultation with stakeholders. Reviewed policies for and financial management of port corporations, including corporate restructuring to facilitate PPP. Tariff assessment. Developed model for cost-benefit analysis of port investments.</p> <p>Name of assignment or project: Urban Environmental Development Project Tonle Sap II; Year: 2016-7. Location: Phnom Penh, Cambodia; Home office: Penang, Malaysia Client: EPTISA (Spain), consultant to the Ministry of Public Works and Transport. Main Project Features: Prefeasibility study for wastewater and solid waste management in 6 subproject cities in the Tonle Sap Basin. Funding: CDIA & Asian Development Bank Positions Held: Economist and Financial Specialist. Activities performed: Reviewed financial management of local governments recommended institutional and regulatory measures to achieve sustainable delivery of flood control, drainage, wastewater services, including user charges and affordability analysis. Prepared benefit-cost analysis for subproject and project justification. Prepared cost tables and financing model for an ADB loan for 5 cities: Battambang, Stung Saen, Serei Saophoan, Kampong Chhnang and Pursat.</p> <p>Name of assignment or project: Issyuk-Kul Sustainable Development Project II; Year: 2015.</p>

	<p>Location: Home office: Penang, Malaysia Client: EPTISA (Spain), consultant to the Ministry of Finance, Kyrgyz Republic. Main Project Features: Feasibility study for wastewater management in three subproject cities. Funding: Asian Development Bank Positions Held: Economist and Financial Specialist (Review and revision of draft for RRP) Activities performed: Reviewed financial management of local government enterprises and recommended institutional and regulatory measures to achieve sustainable delivery of water supply and wastewater services, including user charges and affordability analysis. Prepared model for benefit-cost analysis for subproject and project justification. Preparing cost tables and financing model for ADB loan application.</p> <p>Name of assignment or project: PPP for Dili capital area water supply: Stages I & 2; Year: 2014-2016 (intermittent missions). Location: Dili, Timor, Leste Home office: Penang, Malaysia Client: EGIS Eau, France, consultant to the Ministry of Finance, Timor Leste. Main Project Features: Feasibility study for public-private partnership in water supply Funding: Timor Leste, Infrastructure Fund Positions Held: Financial Management Specialist. Activities performed: Review financial management capacity of Directorate of Clean Water, Ministry of Public Works in developing and operating water supply for Dili Town. Guided development of financial model for PPP. Prepared financial assessment demonstrating two preferred options for PPP. Assisted in drafting report and recommendation of the consultant for institutional and financial arrangements for PPP. Final presentation of finance for Phase I.</p> <p>Name of assignment or project: Regional Roads Development Project II; Year: 2013-2014 Location: Jakarta, Indonesia Client: Directorate-General Highways (Bina Marga), the ADB and Cardno Emerging Markets. Main Project Features: Project Preparation Technical Assistance (PPTA) to Bina Marga for strategic highways and bridges in 5 provinces and the Yogyakarta Region as component of MP3EI. Funding: Asian Development Bank Positions Held: Financial Management Specialist. Activities performed: Reviewed financial management capacity of Bina Marga, financial capacity to maintain road assets, training needs. Prepared cost tables and financing plan for loan application. Assisted in drafting Report and Recommendation of the ADB President to the ADB Board (RRP)</p> <p>Name of Assignment or Project: Municipal Capacity Development component (MCD) of City Region Development Project. Year: 2012-2014 intermittent Locations: Dhaka and Khulna, Bangladesh Client: Local Government Engineering Department (LGED) under ADB loan; Main Project Features: TA for. Municipal Capacity development, urban governance for Dhaka and Khulna region municipalities; Funding: Asian Development Bank Position held: Financial Management Specialist Activities performed: Design, development and implementation of capacity development programs for strengthening, and establishing financial management systems for revenue enhancement.</p> <p>Name of assignment or project: Sindh Cities Improvement Investment Program; Year: 2012. Location: Sukkur, Sindh, Pakistan. Client: North Sindh Urban Services Corporation (NSUSC), a public-sector company that operates in the same manner as a PPP providing services under contract to 6 municipalities. Main Project Features: Technical Assistance to the NSUSC for capacity strengthening of the corporation. NSUSC provides water supply, wastewater management, solid waste management services to 6 municipalities, including managing the preparation and implementation of a \$400 million investment program. Funding: ADB 10-year MFF, \$300 million. Positions Held: Financial Management Specialist, Tariff & Regulatory Adviser. Assigned by SMEC, Australia. Activities performed: Developed tariff model and policies, tariff strategy and tariff schedule for the approval of NSUSC, municipalities and Sindh Province. Financial management and capacity building for revenue enhancement and cost control. Prepared policy paper and related tariff proposals. Prepared financial sections of a 3-year business plan based on a financial model constructed using Excel. The business plan estimated the additional interim funding needed during the expansion of services under the project. The tariff schedules take into account affordability and willingness to pay on the part of consumers, modified according to the category of consumer and volume of water consumed. Advised the NSUSC concerning measures needed to comply with the terms of contract with local governments. Advised on measures needed to bring accounting systems and policies into conformance with International Accounting Standards and agreements between Government of Sindh, GOP and the ADB.</p>
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	<p>Name of assignment or project: Syria Municipal Environment & Infrastructure Project, Ministry of Local Administration. Year:2010-2011. Location: Damascus. Client: European Investment Bank; Main Project Features: Programme to improve decentralized solid waste management, urban transport, urban area development and tourism/ heritage protection, and wastewater.</p> <p>Funding: European Investment Bank, Agence de Développement Française & the EC.</p> <p>Positions Held: Programme/Project Development Manager. Activities performed: Supporting programme & project development including, procurement strategies; financial management; programme and project financial monitoring.</p> <p>Name of assignment or project: Battambang Urban improvements to mitigate Climate Change; Year: 2009-2010; Location: Cambodia; Client: CDIA/SMEC/Battambang Municipal Government; Main Project Features: Technical assistance for pre-feasibility study and support of decentralized urban environmental infrastructure;</p> <p>Funding: ADB Positions Held: Investment and Financing Specialist; Activities performed: Project and municipal financial and economic feasibility analysis: drainage, sanitation, wastewater, solid waste management.</p> <p>Name of assignment or project: Secondary Towns Integrated Urban Environmental Improvement Project; Year: 2009; Location: Nepal; Client: PADECO/Department of Urban Development; Main Project Features: Technical assistance for project preparation; Funding: ADB Positions Held: Financing Specialist; Activities performed: Project and municipal financial and economic feasibility studies: water supply, sanitation, solid waste, roads and drainage, PPP in urban services and water supply, designed management structure for project implementation.</p> <p>Name of assignment or project: Public Private Partnership Project-Bulk Water Conveyance; Year: 2008; Location: Indonesia;</p> <p>Client: C.Lotti Associates/BAPPENAS (National Planning Board);</p> <p>Main Project Features: Technical assistance for policy and project preparation;</p> <p>Funding: World Bank;</p> <p>Positions Held: Team Leader;</p> <p>Activities performed: Team coordination & training. Develop national policy for PPP in bulk water, pilot feasibility study for two projects. Proposed national regulations in consultation with stakeholders. Prepared TOR for procurement of the next phase. Advised BAPPENAS on: (1) institutional arrangements needed to proceed with bulk water PPP for Bandung Metropolitan Area as most favourable pilot project (2) defined scope of a Metropolitan Master Plan for water supply (3) evaluated attractiveness of proposed project and ways to ameliorate negative factors (4) assessed risk parameters and means of mitigating risk.</p> <p>Name of assignment or project: Rural Infrastructure Support Project (RISP); Year: 2007; Location: Indonesia; Client: Direct appointment by DG of Human Settlements; Funding: ADB; Main Project Features: Participatory rural infrastructure development / monitoring & evaluation; Positions Held: Financial Management Specialist; Activities performed: Reviewed funds flow, financial controls & withdrawal of ADB loan funds. Evaluated program implementation & disbursement process based on fact-finding visits to 21 villages in 4 eastern provinces. Produced training module for withdrawal of loan funds. Recommendations for improving financial management by community organizations, including component selection, design, procurement & improved guidelines. Subprojects: rural roads, village water supply, micro-irrigation schemes.</p> <p>Name of assignment or project: Western Java Environmental Management Project; Year: 2006; Location: Indonesia; Client: C. Lotti & Associati & DG of Human Settlements); Funding: World Bank; Main Project Features: Technical assistance for policy and project preparation; Positions Held: Municipal Financial Specialist / Economist; Activities performed: Supported Central Project Management Unit. Guided feasibility studies for environmental programs including municipal waste programs for ten local governments based on a combined technical and financial model for solid-waste management. Assessed local financial capability. Reviewed regional waste management and procurement strategy.</p> <p>Name of assignment or project: Water and Irrigation Management Project (WISMP); Year: 2003; Location: Indonesia; Client: Mott-MacDonald/DG Water Resources; Funding: World Bank; Main Project Features: TA for participatory infrastructure rehabilitation; Positions Held: Local Government Financial Specialist for; Activities performed: Assisted in preparing an irrigation sector project emphasizing participation by provincial governments in river basin management and local governments / water users' associations in irrigation management. Prepared financing model based on funding channels and procurement modalities of local governments and communities. Assisted the WB mission leader to preparing the cost tables and financing plan for WB Head Office. Responsible for developing an overall financing plan based on applying lessons learned on previous projects to estimate costs for provinces included in the project.</p> <p>Name of assignment or project: PISP (Participatory Irrigation Sector Project); Year: 2002; Location: Indonesia; Client: Binnie, Black and Veatch/DG Water Resources; Funding: ADB; Main Project Features:</p>
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	<p>TA for participatory infrastructure rehabilitation; Positions Held: Local Government Financial Specialist; Activities performed: Designed participatory role for local governments and water users' associations in rehabilitating, upgrading, and managing existing irrigation facilities. Prepared cost tables and financing plan based on funding channels and procurement modalities of local governments and communities. Analyzed economic issues related to geographic coverage of river basin councils. Assisted ADB Appraisal Mission in preparing cost tables and financing model for the RRP. The project model was based on sample of districts to estimate costs for all provinces included in the project.</p> <p>Name of assignment or project: Bali Water Supply Private Sector Participation-PPP; Year: 2001; Location: Indonesia; Client: Osana International & SMEC Australia/DG Human Settlements; Funding: World Bank; Main Project Features: monitoring and evaluation of PSP strategy; Positions Held: Financial Specialist; Activities performed: Reformulated conceptual framework and procurement strategy for PPP in water supply for southern Bali. Developed model for estimating elasticity of demand for water and proposed water tariff structure for full cost recovery with provision for cross-subsidy. Developed model for capital and operating costs and estimated cost for bulk water delivery to Denpasar and municipal capitals. Recommended reformulating the institutional arrangements, including the legal basis for participation of the parties; advised measures to mitigate adverse tax effects; proposed revision of the design of the system to reduce the unit cost of delivering bulk water.</p> <p>Name of assignment or project: Private Sector Participation-PPP, Sumatra; Year: 1999-2000; Location: Indonesia; Client: Gutteridge Haskins & Davey/DG Human Settlements. Funding: ADB Main Project Features: Technical assistance for project preparation; Positions Held: Financial Specialist; Activities performed: Assistance to local governments in involving the private sector in provision of urban infrastructure and services, especially water supply, including identification. Assisted in preparing a feasibility study for Pekanbaru City, including strategy for establishing a PPP in the form of a joint-venture water supply concession. Constructed a financial model including profit and loss statement, balance sheets and cash flow projections. Prepared simplified approach for a water tariff with cross-subsidy. Assisted in preparing the financial sections of the draft contract for international tendering, including the capital structure of the joint-venture company. Assisted in evaluating the bids. Prepared evaluation criteria for water pricing proposals. Revised the financial model to allow comparison of the bids by two multinational water supply corporations. This was necessary because the bids proposed different capital structures which were acceptable to all parties.</p> <p>Name of assignment or project: CLEAN-Urban Project; Year: 1998-99; Location: Indonesia; Client: Research Triangle Institute/Government of Indonesia; Funding: USAID Main Project Features: Technical assistance for project preparation; Positions Held: Financial Specialist; Activities performed: (1) Prepared innovative approaches to municipal finance, including urban development, water supply and community participation. (2) Developed computer models, programs and manuals for preparing development programs, including assessment of financial sources and preparation of financing plans using grants and loans from central government. (3) Acted as understudy to the adviser to the Ministry of Finance in support of new legislation for funding channels from central to local governments. (4) Designed and supervised preparation of a revised Corporate Plan for the Malang City Water Board based on a new financial model and revised water tariff.</p> <p>Name of assignment or project: Sumatra II Integrated Urban Infrastructure Project; Year: 1997-98; Location: Indonesia; Client: Louis Berger Int./DG Human Settlements; Funding: ADB; Main Project Features: TA for project implementation; Positions Held: Financial Specialist in the Central Project Management Unit; Activities performed: Support and monitoring for procurement and implementation. Including preparation of financing plans for Sub-Project Appraisal Reports SPARs for 8 municipal infrastructure programs and their water enterprises PDAMs. Revised water supply proposals for 8 municipalities based on a revised financial model, improved water demand estimates, and reduced capital costs. Assisted in realigning borrowing requirements for water enterprises based on these revised demands.</p> <p>Name of assignment or project: Botabek II Integrated Urban Infrastructure Project; Year: 1996-97; Location: Indonesia; Client: DHV Consultants/DG Human Settlements; Funding: ADB; Main Project Features: TA for project preparation; Positions Held: Financial Specialist; Activities performed: Preparation of supporting documents for ADB loan. Assessed local government financing capability. Prepared financing plans for SPARs. Developed a financial model applied to 5 water supply enterprises in the Jakarta outer metropolitan area, including tariff proposals. Tariff increased were based on a demand elasticity model. Assisted the ADB Appraisal Mission in preparing cost tables and the financing model for the RRP.</p> <p>Name of assignment or project: Fact Finding and Appraisal of the Second Water Supply and Sanitation Project; Year: 1993; Location: Bangladesh/ Manila; Client: Consultant to Asian Development Bank; Funding: ADB; Main Project Features: Water Supply and Sanitation for 9 Secondary Cities; Positions Held: Economist & Financial Specialist for ADB Fact-Finding and Appraisal Missions led by Assad Ali Shah;</p>
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Activities performed: Economic and financial appraisal, preparation of final cost tables and financing plans for the Report and Recommendation of the President (RRP). Prepared new cost tables and financing plan for the project based on ADB guidelines. Prepared profit and loss statements, balance sheets and cash flow projections for 9 water supply utilities together with tariff proposals taking account of affordability and willingness to pay. Estimated FIRRs. Prepared logframe for revenue-improvement action plan (RIAP).

Name of assignment or project: Integrated Urban Infrastructure Development Program for West Java; **Year:** 1987-89; **Location:** Indonesia; **Client:** Louis Berger International Int / DG Human Settlements; **Funding:** Asian Development Bank; **Main Project Features:** TA for project preparation; **Positions Held:** Financial Specialist; **Activities performed:** Evaluated the financial capacity of 12 local governments and water enterprises; prepared financial plans for SPARs. Responsible for financial evaluation of infrastructure program for secondary towns, including water supply development programs. Prepared model for projecting financial statements of water enterprises including tariff proposals. Assisted ADB Appraisal Mission in preparing cost tables and financing plans for the RRP.

Name of assignment or project: Asuncion Sewerage Master Plan / Corporate Plan and Water Tariff Study; **Year:** 1985-86; **Location:** Paraguay; **Client:** Halcrow-Fox & Corposana; **Funding:** UK Government; **Main Project Features:** TA for project preparation and corporate plan; **Positions Held:** Financial Specialist and sub-team leader for Corporate Plan and Tariff Study; **Activities performed:** (1) Prepared cost tables and financing plan for wastewater feasibility study. (2) Led a team of Corposana economists in preparing a corporate plan, tariff structure and cost recovery proposals. (3) Prepared computer models using LOTUS 1-2-3 for projecting financial performance of Corposana, (the national water and sewerage corporation) testing various tariff assumptions. (4) Trained two Corposana economists. (5) Coached the team in presenting the proposals to a committee of the national parliament.

Name of assignment or project: Institutional Support for Water Supply Sector - East Java; **Year:** 1984-85; **Location:** Indonesia; **Client:** WD Scott Int / DG Human Settlements; **Funding:** Australian Aid; **Main Project Features:** Reviewed national policy for IKKs and secondary cities. **Positions Held:** Sub-team leader and financial specialist; **Activities performed:** Developed computer models for financial analysis of water supply enterprises using Appleworks spreadsheet.; reviewed National Tariff Guidelines/ national tariff policy for water supply. Conducted household surveys in 15 towns and villages of East Java. **Proposed national selection criteria for candidate IKK villages and recommended revision of the engineering design of water supply systems in line with survey results.**

Name of assignment or project: Various; **Year:** 1982-83; **Location:** Oman; **Client:** W.D. Scott, UK and Sultanate of Oman; **Main Project Features:** Project preparation and sector analysis; **Positions Held:** Senior Financial Specialist and Consultant to the Directorate General of Finance; **Activities:** National Water Supply Study, including corporatization of water supply for the Capital Area, water supply tariff. Constructed a computer model using FORTRAN for assessing water supply costs from combined power and desalination plant. Conducted pre-feasibility study of PPP proposal for expanding power and water production for the Capital Area based on desalination using natural gas.

14. Certification: I, the undersigned, certify to the best of my knowledge and belief- (i) this CV correctly describes my qualifications and my experience (ii) I am employed by the Executing or the Implementing Agency (iii) I am a close relative of a current ADB staff member (iv) I am the spouse of a current ADB staff member (v) I am a former ADB Staff member (Secondment Staff) ▪ if yes, I retired from the ADB over 12 months ago (vi) I was part of the team who wrote the terms of reference for this consulting services assignment (vii) I am sanctioned (not eligible for engagement) by the ADB	Yes	No
	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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I understand that any wilful misstatement described herein may lead to disqualification or dismissal, and/or any other disciplinary action being taken by the ADB/

Date: October, 2018

