



John Reilly - PE, CPEng, BE, MS

Management, strategy, organization, contracting & delivery, cost and risk processes, partnering/team-alignment and leadership of expert panels for complex infrastructure and megaprojects. www.JohnReilly.us John@JohnReilly.us

Education

M.S. Structural,
University of California,
Berkeley 1964

B.E. Hons. Civil/Structural
Engineering, University of
Sydney 1963

Professional Registrations

Massachusetts(PE),
Australia (CPEng.),
BC Canada (PEng)
(inactive)

Professional

President, American
Underground
Construction Association
1999- 2001

Chair, ITA Working Group
13, "Direct and Indirect
Advantages of
Underground Facilities"

Chair, Working Group 20,
"Urban Problems,
Underground Solutions".

Chair, North American
Tunnelling Conference,
Boston, June 2000

Chair, "Management,
Policy and Contracting for
underground
construction" AUA/ITA
Conference. April 1996,
Washington DC

Chair, "Policy and Finance"
for Underground
construction, North
American Tunnelling
Conferences Denver 1994
and Boston 1992

Member, International
Tunnelling Association

Member, Australasian
Tunnelling Association

Member, British Tunnelling
Society (BTS)

Member, Institution of
Engineers Australia

Member, American Society
of Civil Engineers (ASCE)

Professional Experience

John Reilly has 55 years of experience working on management, strategy, organization, technical reviews, management oversight, expert and strategic advisory panels, team alignment, partnering, contacting/delivery methods, risk management, and probabilistic cost/schedule analysis for large, complex infrastructure projects including metros and light rail systems, underground structures, tunnels, highways, bridges and airports.

High-level Expert Panels / Strategic Advisory Teams:

John has been responsible for the initiation of, input to, participation in, and management of several Expert Review Panels and Strategic/Technical Advisory Teams, advising owners on management, strategies and key technical elements associated with the delivery of complex infrastructure programs.

Washington State: Executive review and report to the Secretary of Transportation, focused on internal decisions which led to problems on the SR520 Floating Bridge Program, 2013; Chair, SR520 Expert Review Panel, recommendations to fix pontoon construction deficiencies, 2012-2013; Chair, SR520 Expert Review Panel, Tunnel alternatives, Westside/Montlake Cut, 2008.

Other locations; Prime consultant, Project Management Oversight and Assistance, Los Angeles Metro Heavy and Light Rail Programs, 1991-97; Report, U.S. Department of Energy, High-Level Nuclear Waste Technical Review Board 1995; Secretary, Board of Consultants, Washington DC Metro System 1970-72.

Transit / Metro Programs (partial list)

Los Angeles Metro—Heavy and Light Rail projects: Report and recommendations contracting and delivery methods, LACMTA Westside Extension Program, 2012.

Readiness review LACMTA Crenshaw/LAX light Rail Program, 2011.

Project management oversight and technical assistance for tunnels, underground stations, at-grade sections and bridges as part of management oversight for cost-to-complete, design reviews, technical reports, agency and consultant costs, risk workshops, 1991–1997.

London Underground: Partnering, signal replacement program and manufacture of 1746 new transit vehicles—design-build structure within an alliance contract.

BART Vehicle Rehabilitation Program: Partnering for the rehabilitation of the 1st fleet

Toronto—Rapid Transit Expansion Program: Management, organization, delivery procedures and implementation of full team alignment for the integrated TTC/consultant team on the CN\$3 billion Rapid Transit Expansion Program. Assistance with value engineering, configuration management, design, and construction interfacing (1994–1996).

Boston—MBTA, Southwest Corridor Transit program: Consultant Program Director for program management, final design, and construction management assistance to MBTA for Boston's \$1 billion (1980) Southwest Corridor transit, high-speed and commuter rail, highway and urban design project. Issues resolution after major political transition, delivered under budget and close to schedule. Winner of the President's Design Award and ASCE Outstanding Civil Engineering Achievement of 1987 (1978–1987).



Contracting & Delivery Methods for Infrastructure Programs

Overview—Design-bid-build is the traditional procurement method for underground construction in the U.S. and has remained virtually unchanged for 50 years. It is a basic approach, suitable where there is clarity of deliverable and low probability of major risk and changed conditions. Design-build is gaining momentum and there is significant data regarding its advantages. Other promising methods such as General Contractor-Construction Manager (aka GCCM or Contractor at risk), incentive options (A+B bidding) and, more recently, Alliancing (Australia, UK), Early Contractor Involvement (UK) and Fixed Price Incentive (Firm Target) are in use with application to US and international projects.

John has authored several reports on contracting and delivery processes, including design-build, GCCM and Alliancing. Agencies have included the Washington State Department of Transportation and the Los Angeles Metropolitan Transit Authority. He has presented papers on this topic at US and International conferences from 2007 thru 2017.

Project Examples, Contracting & Delivery - USA

Los Angeles Metro, Purple Line Extension, Contracting & Delivery Report, 2012. John reported on contracting and delivery options for the Los Angeles Metro, Purple Line Extension in his report, “LACMTA Westside Subway Extension Project Review of Contracting and Delivery Methods” August 6th, 2012. The report included descriptions of viable contracting and delivery methods including: pros and cons; recommended decision methodology; precedents; goals and objectives; plus a summary of the contracting practices of US and Canadian agencies. The work was coordinated with FTA and the FTA PMOC and included workshops on contracting and delivery selection.

Washington State DOT, Contracting & Delivery, 2009. John worked with the WSDOT Executive and Project Directors to assist with necessary changes, related to agency policies and procedures, for design-build contracting for multiple mega-projects—\$13 billion in the Seattle area in the same time-frame. Design-build was a relatively new process for staff so its application required a clear understanding of key issues. Revenue pressures required significant reductions in overall agency staff with an associated organizational re-alignment.

Contracting & Delivery Report, Washington State Legislature, 2008. John wrote a report on contracting and delivery processes, including design-build, GCCM, CM@Risk and Alliancing, for the Washington State Department of Transportation’s report to the WA Legislature.

This report presented a summary of current, and emerging, innovative project delivery methods which the Washington State Department of Transportation (WSDOT) should consider in order to more effectively deliver WSDOT transportation projects. The report outlined promising “new and innovative delivery methods” that had been evaluated, and implemented in the U.S. and internationally, and compared them to traditional WSDOT procurement methods. Some of these new methods hold promise to add value for the public through more innovative and collaborative management which has been reported to reduce overall cost and schedule, reduce cost and schedule growth during construction, and reduce disputes, claims and litigation. The report also discussed industry concerns related to current procedures for the delivery of large, complex, transportation projects.

Project Examples, Contracting & Delivery - International

Lima Airport, new Terminal & Runway 2018 – John is consulting assistance for management, team-alignment, strategy, contracting & delivery, probable cost / schedule and risk identification & management for this major program in Peru.

Jumeirah Gardens, New City, Dubai 2008 — John provided recommendations and guidance for delivery options for the design and construction of a \$95 billion new city in Dubai.



Within 5 months he provided contracting and delivery recommendations to the program executive and implemented the initial program team alignment / chartering process in an international multi-cultural environment.

London Underground, UK, New Signals & Transit Vehicles, 2003-2004 — John provided team partnering implementation for the replacement of the signal system on the lines below, working with a design-build contracting method under an allied PPP prime program manager. The London Underground lines to be upgraded were:

- BCV - Bakerloo, Central, Victoria and Waterloo & City (all deep Tube lines)
- SSL - Metropolitan, District, Circle, Hammersmith & City and East London routes.

Rapid Transit Expansion Program, Toronto Canada, 1994-1996 — John advised the Agency (TTC) and program manager on organization, internal alignment, value engineering, configuration management and contracting/delivery options for the fully integrated TTC/consultant team of the \$3 billion RTEP. He also managed work-out sessions for TTC Engineering and Construction staff's new organizational approach, based on the experience of the fully integrated RTEP program.

Mississauga Bus Rapid Transit Project, Ontario, Canada 2008 — John authored a report, with analysis and recommendations for contracting and delivery of the Mississauga Bus Rapid Transit Project. The report provided a framework to select the most appropriate contracting and delivery method for the given consideration of the following key factors:

- experience of the City with the alternative project delivery methodologies;
- specific characteristics of the project;
- schedule for implementation; and
- experience of agencies in undertaking recent / similar major transportation projects.

Cost Estimating, Probabilistic cost & risk processes:

In 2002, with the Washington State Department of Transportation and a colleague, John developed the WSDOT Cost Estimate Validation Process (CEVP®), a structured approach to cost estimating which combines base cost with defined risk and opportunity events to estimate the “range of probable cost and schedule”. The defined risks are then included in explicit risk management plans. CEVP® has been implemented as a normal business process by WSDOT and is being used by FHWA and other US and Canadian transportation and infrastructure agencies. Sponsored by the Secretary of Transportation, Doug MacDonald.

John is currently advising on application to the Lima Peru Airport Project (with RIAAT - Risk Identification and Administration tool), and is working with NHI/FHWA in the US to create an e-learning workbook for probable cost and schedule estimation.

Risk and Risk Workshops – management, facilitation and reports:

Risk Workshops include: Los Angeles Metro Green Line risk workshop re readiness for operations, 1994; Sir Adam Beck Niagara hydro tunnel, risk workshop, 1998; Brightwater program, King County WA - Risk process and workshops to narrow alternatives for tunnels, 2003; Pittsburgh PA, Light Rail tunnels, cost-risk workshop, 2003; Pennsylvania Maglev program, cost-risk workshop 2003; Dallas Airport people mover operational risk/readiness workshop, 2004; Alaska Railroad extension risk workshop followed by cost-risk workshop, 2005; Alaska Railroad Fairbanks alignment risk workshop, 2005; Utah DOT, risk / CEVP workshop, Salt Lake City, 2006; Omaha CSO program risk workshop, 2007; Lake Mead Water Intake #3 tunnel and shaft risk oversight, risk compliance reports, facilitation of risk workshops, 2008-2015; Lima Airport Peru - risk management, risk identification workshops 2017-Present.



Publications

John has authored over 80 papers / presentations covering planning, management, oversight, partnering, team alignment, contracting and delivery, bridge design, risk management, probabilistic cost and risk and life-cycle costs in over 20 countries.

Selected papers relating to program management, risk, contracting/delivery include:

- Reilly, J.J., Essex, R. & Hatem, D. 2018 "Alternative Delivery Drives Alternative Risk Allocation Methods", NAT2018 (pending)
- Sander, P., Reilly, J. & Entacher, M. "Integrated Cost and Schedule Analysis for Major Infrastructure Projects, NAT2018 (pending)
- Reilly, J.J. & Hatem, D. 2017 "Boston's Central Artery / Tunnel Project – Lessons Learned" Proc RETC June
- Sander, P., Entacher, M., Reilly, J., & Brady, J., 2017 "Risk-based Integrated Cost and Schedule Analysis for Infrastructure Projects", TBM Business Magazine April.
- Reilly, J.J. 2016b "Megaprojects – 50 years, What Have We Learned?" ITA WTC2016 Proc. April
- Sander, P., Reilly, J.J. & Moergeli, A., 2016 "Risk Management – Correlation and Dependencies for Planning, Design and Construction", ITA WTC2016 Proc. April.
- Reilly, J.J., Moergli, A. & Sander, P. 2015 "Risk-Based, Probabilistic Cost Estimating Methods" International Tunneling Association, World Tunnel Congress, Dubrovnik May
- Reilly, J.J. 2014 "Megaprojects Management and Delivery", Paper and presentation to the Italian Tunneling Society conference, Bologna, October.
- Reilly, J.J. 2013c "Alternative Contracting and Procurement for Megaprojects", UCA/Tunneling Journal Cutting Edge Megaprojects Conference, Seattle, November.
- Reilly, J.J., 2013 Author of the Foreword and co-author of Chapters on Risk and Cost + Schedule management in "Managing Gigaprojects", ASCE press, Ed Galloway, Nielsen and Dignum.
- Reilly, J. J. 2012 "Review of Contracting & Delivery Methods" LACMTA Westside Extension.
- Reilly, J.J., Laird, L., Sangrey, D. & Gabel, M. 2011a "Use of Probabilistic Cost Estimating CEVP® in the Management of Complex Projects to Defined Budgets" Proc. ITA Conference, Helsinki, May.
- Reilly, J.J. 2011c "Alternative Contracting and Delivery Methods," TunnelTalk September.
- Reilly, J.J., Sangrey, D. and Warhoe, S. 2010a "Management of Cost and Risk to meet Budget and Schedule," International Tunneling Association, World Tunneling Conference, Vancouver, May.
- Reilly, J.J. 2010c, "Cost and Schedule Control," Chapter 5 "Megaprojects: Challenges and Recommended Practices" Spring.
- Reilly, J.J. 2009b, 'Alternative Contracting and Delivery methods – Update', Proc. International Tunneling Association, World Tunnel Conference, Budapest May
- Reilly, J.J. and Smith, R., 2008c, "Alternative Contracting and Innovative Project Management" Report to the Washington State Legislature, WSDOT, July.
- Reilly, J.J. 2008d, "Alternative Contracting Methods – Part II", Proc. North American Tunneling Conference 08, San Francisco, June
- Reilly, J.J. 2008e, "Chapter 4, Risk Management" in "Recommended Contract Practices for Underground Construction," Society for Mining, Metallurgy, and Exploration, Inc. Denver.
- Reilly, J.J. 2004c w. McBride, M, Sangrey, D, MacDonald, D and Brown, J. "The development OF CEVP® WSDOT's Cost-Risk Estimating Process" Proc. Boston Society of Civil Engineers, Fall/Winter