

# Mohamed Hegab, PhD, PE, MRICS, PMP, CCM

Professor & Director of the Construction Management Program, California State University- Northridge  
Vice President of Ca Project Management Consultants  
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## EDUCATION

2003 PhD Civil Engineering / Construction Management  
1998 MS Civil Engineering / Structural Engineering  
1992 BS Civil Engineering,

## CURRENT PROFESSIONAL REGISTRATION

Professional Engineer (PE) California Civil C 69501  
Professional Engineer (PE) North Dakota Civil PE 5035  
Project Management Professional (PMP) # 505983  
Member of the Charter Institute of Surveyors (UK) (MRICS) # 1256819 - Prestigious project controls license internationally.  
Certified Construction Manager (CCM) # 2358 –

## OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.)

Dr. Hegab has 20 years of diverse range of experience managing the project controls and claims on public, commercial, and construction projects. He has particular extensive expertise in project scheduling, claim analysis, negotiations, and resolution, cost estimating and controls. He has expertise in productivity analysis and improvement, and reengineering business processes. He is current Vice President for Ca Project Management Consultants.

Dr. Hegab taught Public Private Partnership courses to Caltrans engineers. Moreover, he is registered as a Dispute Review Board qualified member for the Department of Transportation in California, Colorado, and Idaho states. He is a member of the advisory board of the P3 Task Force of the DRBF (Dispute Review Board Foundation) in North America.

He taught project management, scheduling, cost estimating, labor productivity, and contract and specifications several times at California State University Northridge, and North Dakota State University. He is currently an Associate Professor at CSUN

He is professional with project management leading software such as Primavera (P3, P5 & P6), MS Project, Claim Digger, Timberline, On Screen Take off, Expedition, Prolog, MS Office, etc.

Dr. Hegab has authored several innovative technical papers that been published in prestigious ASCE journals such as:

**Developing a Complexity Measure for Project Schedules**

**Evaluating Cost Overruns of Asphalt Paving Project Using SPC Methods.**

**Using Weibull Analysis For Evaluation of Cost And Schedule Performance.**

**Decision Support System for Commencement Delay Claims**

**Delay Time Analysis in Microtunneling Projects.**

**Contractual Risk Identification and Mitigation in Microtunneling and Trenchless Technology Projects**

## RELEVANT PROJECTS

(3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE



Check if project performed with current firm

### Related Experiences

#### DRB Member of Presidio Parkway P3 Project, District 4, Caltrans

The Presidio Parkway project is a replacement of Doyle Drive, a 1.6-mile segment of Route 101 in San Francisco that is the southern access to the Golden Gate Bridge, connecting Marin and San Francisco counties and providing a major regional traffic link between the peninsula and North Bay Area counties. Construction's initial cost is \$365M. Disputes range from \$6-20M

**Scheduling review, estimating, and claims for Diemer Water Plant, Yorba Linda**

Reviewing baseline, monthly construction schedule, evaluating delays, preparing schedule review reports, and evaluating claims and change orders. Project Value is \$200 Million.

**Scheduling review and claims for Southern California Edison’s Tehachapi Renewable Transmission Project(TRTP) — Segments 7–8, Yorba Linda**

Reviewing baseline and monthly construction schedule, evaluating delays, and preparing schedule review reports for the general contractor to meet the requirements of the owner. Project consist of removal of existing electrical transmission wire (220 kilovolt (kV)), structures and foundations, followed by installation of new foundations and electrical transmission structures (500 kV). Upon completion, the project will provide renewable generated electricity and help meet California’s renewable energy goals.

**Scheduling review and claims for Highway 90, Yorba Linda**

Reviewing monthly construction schedule, evaluating delays, preparing schedule review reports, and evaluating claims and change orders when requested.

**Scheduling review and claims for Southern California Edison’s Tehachapi Renewable Transmission Project(TRTP) —Segments 7–8, Yorba Linda, CA**

Reviewing baseline and monthly construction schedule, evaluating delays, and preparing schedule review reports for the general contractor to meet the requirements of the owner. Project consists of removal of existing electrical transmission wire (220kilovolt (kV)), structures, and foundations, followed by installation of new foundations and electrical transmission structures (500kV). Upon completion, the project will provide renewable generated electricity and help meet California’s renewable energy goals.

**Workplan Development for Caltrans D8, San Bernardino**

Evaluating existing workplans and extracting their anomalies, development of workplan new projects for project management division at Caltrans D8 for FY08/09, development of baseline schedule for some projects, development of earned value management reports for the project management division of D8.

**Design Scheduling for 7<sup>th</sup> Standard Rd, Bakersfield**

Development of design scheduling for the 7<sup>th</sup> st., Bakersfield enhancement project for Kern County. IT included new 8 bridges, widening of road, and demolishing of couple of existing bridges.

**Claims Analyst for Highway Project, University of North Dakota**

Third party representing University of North Dakota in an \$800,000 complicated claim between the federal government and a contractor for a highway project that was federally funded. Saved the claim from litigation and reached a settlement.

**Reviewing Cooperative Agreements for Caltrans HQ, Sacramento**

Reviewing cooperative agreements between Caltrans and other agencies for projects in Northern California and the Bay Area (D1, 2, 3 &4), communicating with the districts, legal and accounting department to achieve agreements between parties on terms.

**Project Controls Engineer for CWC Wastewater Project (scheduling, estimating, claims preparation)**

CWC project was a wastewater pipeline network project that utilised tunneling, microtunneling, and open cut. Project value was US\$300 Million Duties included preparation of application of payment for subcontractors, administration of Subcontractors contracts, change orders, claims, scheduling, supervising design of some structural elements of the project such as manhole shafts, quantities take off, material procurement, etc.

**Used Software:**

**MS Project, Primavera (P3, P5 &P6), SureTrak, Timberline, Prolog, Expedition, Claim Digger, Schedule Cracker, OnScreen takeoff, MS Office, etc.**

## **Developed Software:**

**Schedule Cracker®** : It is an enterprise class Scheduling Analysis and Business Intelligence tool for Project Management and right at your desktop. Providing deep analysis and visualization of a project's CPM schedule through interactive dashboards and a library of over 200 analytical metrics. Leveraging the latest technology and standards for software development to fully comply with the DCMA, GAO, and EVM 's ANSI 748 standards. Schedule Cracker's procedures analyze and compare project schedules for alerts, trends the project 's performance over multiple schedule revisions, forecasts future performance, and performs full earned value analysis..

## **Other Related Experiences**

### **Directing the Construction Management Program, California State University Northridge**

Managing resources, Part Time professors, selecting software, selecting topics of coursework, preparing the program to be ACCE accredited, and teaching construction management courses such as scheduling, estimating, contracts, project management, dispute prevention, etc.

### **Project Manager / Project Engineer for Material Testing and Geotechnical Services, Rancho Cucamonga**

Managing street improvement , and grading projects. Duties included proposal writing, estimating of cost; assess resources needed, reviewing billing, and contacting clients to solve issues. Moreover, preparing Geotechnical Reports, Caltrans Asphalt testing reports, soil testing reports, Concrete Testing reports, slope stability, static and dynamic settlement analysis, and other PM related activities.

### **Estimator for ArabCon (General Contractor)**

Worked in a team to estimate a number of local and international projects ranged \$5 - \$100 Million

### **Construction Site Engineer for Cairo Metro Line 2**

Field inspection and supervising of excavation, structures, surveying, rebar workshop, and construction crews.

### **Planning Engineer for a New Telecommunication Networks**

Planned utilities networks for telecommunications in a number of new cities in Cairo.

### **Structural Designs for Crystal Sugar Factories, North Dakota**

Performed structural designs of machinery supporting systems and other structures, Inspection of construction. Solve on-site problems related to structural and geotechnical engineering.

## **Publications**

### ***Books***

Hegab, M. (2015),” "Public Private Partnerships for Highway Projects: Contract Administration" CreateSpace Publisher, (In Press)

Hegab, M. (2014),” "Public Private Partnerships for Highway Projects: Project Selection and Decision Analysis" CreateSpace Publisher, ISBN-13: 978-1494757632

Nassar, K., Hegab, M. (2010),” Construction Scheduling with SureTrak” CreateSpace Publisher

Hegab, M. (2009). " "Productivity of Microtunneling Projects: Estimating Models for the Microtunneling Process for Water and Wastewater Pipelines."VDM Verlag, ISBN: 978-3639177077.

### ***Referred Journal Papers***

Hegab, M., Salem, O. (2010) "Ranking of the Factors affecting Productivity of Microtunneling projects." ASCE Journal of Transportation Engineering, Scheduled to be published in Feb 2010.

Hegab, M., Smith, G. (2009) "Labor Performance Analysis for Microtunneling Projects." ASCE Journal of Construction Engineering and Management, 135(5), pp. 432-435

Nassar, K. and Hegab, M. (2008)."Closure to "Developing a Complexity Measure for Project Schedules" ASCE Journal of Construction Engineering and Management. 134(3), pp. 230-232

Hegab, M., and Smith, G. (2007) " Delay Time Analysis in Microtunneling Projects." ASCE Journal of Construction Engineering and Management, 133(2).

Ali,S., Zayed,T. and Hegab, M. (2007) " Modeling the Effect of Subjective Factors on Productivity of Trenchless Technology Application to Buried Infrastructure Systems." ASCE Journal of Construction Engineering and Management, 133(10).

Hegab, M., Smith, G., and Salem, O. (2006) "Soil Penetration Modeling in Microtunneling Projects." ASCE Journal of Construction Engineering and Management,132(6).

Nassar, K., and Hegab, M. (2006). "Developing a Complexity Measure for Project Schedules ". ASCE Journal of Construction Engineering and Management, 132(6).

Nassar, K., Nassar, W. and Hegab, M. (2005). "Evaluating Cost Overruns of Asphalt Paving Project Using SPC Methods." ASCE Journal of Construction Engineering and Management, 131(11).

Nassar, K., Gunnarsson, H., and Hegab, M. (2005). "Using Weibull Analysis For Evaluation of Cost And Schedule Performance." ASCE Journal of Construction Engineering and Management, 131(12).

Hegab, M., and Nassar, K. (2005). "Decision Support System for Commencement Delay Claims." ASCE Journal of Practice Periodical on Structural Design and Construction, 10(3), August 2005, pp. 177-180.

Hegab, M., Yazdani, S., Ghaith, H., and El-Hashemy, H. M. (2005). "Experimental Study on the Effect of Spliced Reinforcement in High Strength Concrete Beams." Journal of Advances in Structural Engineering, 8(1), January 2005, pp. 45-53.

Hegab, M., and Salem, O. (2004). "Productivity Analysis for Boulac's Wastewater Microtunnels in Egypt." ASCE Journal of Practice Periodical on Structural Design and Construction, 9(2), May 2004, pp. 116-120.

Salem, O., and Hegab, M. (2001). "Contractual Risk Identification and Mitigation in Microtunneling and Trenchless Technology Projects: No-Dig Engineering Journal," Vol. 8, No.3, 4<sup>th</sup> Quarter 2001, pp.5-9.

### ***Referred Conference Papers***

Hegab, M. and Nassar, K. (2008). "Budgeting Design Costs for Transportation Projects using Probabilistic Analysis" Proceeding of the Association of Egyptian American Scholars (AEAS) 35th Annual Conference, Cairo, Egypt, December 27-29

Nassar, K., and Hegab, M. (2008). "Evaluating Contractor Performance: Application to the UAE Construction Industry" Proceeding of ASCE 5th International Engineering and Construction Conference (IECC'5), Irvine, Ca, August 27-29.

Nassar, K., and Hegab, M. (2007). "Planning and Using a Work Breakdown Structure in Construction Projects" Proceeding of the Association of Egyptian American Scholars (AEAS) 34th Annual Conference, Long Beach, Ca, Egypt, December 14-16

Hegab, M., and Nassar, K. (2006). "Stochastic Prediction of Design Costs for Transportation Projects." Associated Schools of Construction: Proceedings of the 42nd Annual Conference, Colorado State University - Fort Collins, Colorado, April 20 - 22, 2006.

Nassar, K., and Hegab, M. (2006). "RAP Detection and Quantity Determination in US Asphalt Pavements." Associated Schools of Construction: Proceedings of the 42nd Annual Conference, Colorado State University - Fort Collins, Colorado, April 20 - 22, 2006.

S. Yazdani, J. Maxwell, and M. Hegab (2005). "Equivalency of strain and stress space formulation in the modeling of nonlinear behavior of concrete and mortar materials." Proceedings of the 3rd International Structural Engineering and Construction Conf. Shunan, Japan, 2005

Nassar, K., Hegab, M., and Jack, N. (2005). "Design Cost Analysis of Transportation Projects." Proceedings of Construction Research Congress 2005: Broadening Perspectives, April 5.7, 2005, San Diego, CA.

Hegab, M. (2005). "Prediction of Productivity for Microtunneling Projects in Bidding Phase." Proceedings of Construction Research Congress 2005: Broadening Perspectives, April 5.7, 2005, San Diego, CA.