

# BEKİR OĞUZ BARTIN

DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING  
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## EDUCATION

- Ph.D., Civil & Environmental Engineering Department, Rutgers University  
Received in October 2006  
*Thesis Title:* Quality of Traveler Information on Freeway Networks  
Advisor: Dr. Kaan Ozbay
- M.Sc., Civil & Environmental Engineering, Rutgers University  
Received in October 2000  
*Thesis Title:* Cost of Transporting People in New Jersey  
Advisor: Dr. Kaan Ozbay
- B.S., Civil & Environmental Engineering, Middle East Technical University, Turkey  
Received in July 1997.

## APPOINTMENTS

- Assistant Professor and Chair, in Civil Engineering Department, Istanbul Kemerburgaz University, 2012- Present
- Research Associate in Civil & Environmental Engineering Department, Rutgers University, September 2003 – 2012
- Research Assistant in Civil & Environmental Engineering Department, Rutgers University, January 1998- September 2003

## TEACHING

- Spring 2014, Mathematics for Architecture II
- Spring 2013, 2014, Computer Programming I
- Fall 2012, 2013, Computer Programming I
- Fall 2011, Advanced Transportation Economics, co-instructor with Dr. Kaan Ozbay
- Spring 2009-2011, Transportation Engineering II, co-instructor with Dr. Kaan Ozbay
- Spring 2008, Transportation Engineering II
- Fall 2007, Advanced Transportation Economics
- Fall 2005, Transportation Planning, with Dr. Kaan Ozbay
- Spring 2005, Intelligent Transportation Systems, with Dr. Kaan Ozbay
- Spring 2005, Transportation Engineering II, with Dr. Kaan Ozbay
- Spring 2003, Transportation Engineering II, with Dr. Kaan Ozbay

## RESEARCH INTERESTS

- Simulation Modeling and Analysis
- Transportation Economics
- Incident Management
- Traveler Information Systems
- Traffic Data Analysis

## RESEARCH PROJECTS

- **Research Associate** “Work Zone Consolidation Feasibility (2012-08)” funded by New Jersey Department of Transportation for the Period of 04/12-04/14 (Co-principal Investigator)
- **Research Associate** “Snow Application Software” funded by the New Jersey Turnpike Authority for the period of 04/11-12/13.
- **Research Associate** “Evaluation of Hand-held Devices (2011-05)” funded by New Jersey Department of Transportation for the Period of 09/11-12/12 (Co-Principal Investigator)
- **Research Associate** - "Benefit Cost Analysis of Hybrid Bus Deployment on Transit Routes" funded by the Federal Transit Administration for the period of October 2009 - September 2011 (Principal Investigator)
- **Research Associate** – “Traffic Simulation Modeling and Analysis of Interchange 14A and Proposed Concept 11D” funded by the New Jersey Turnpike Authority for the period 2012-2013.
- **Research Associate** – “Regional Traffic impact Study for Newark Bay-Hudson County Extension Milepost N6.00 TO N8.20 Bridge Deck Reconstruction and Miscellaneous Improvements”, funded by the New Jersey Turnpike Authority for the period 2009-2011.
- **Research Associate** – “Traffic Control and Work Zone Safety for High Volume Roads” funded by New Jersey Department of Transportation for the Period 1/10 – 7/10. (Co-Principal Investigator)
- **Research Associate** - “Automated Pedestrian Counter (Project 2010-001)” funded by the New Jersey Department of Transportation for the period of 02/08- 02/10. (Co-Principal Investigator)
- **Research Associate** – “Transportation: Impact on Economy (Project 2009-15)” funded by the New Jersey Department of Transportation for the period of 02/07- 02/09. (Co-Principal Investigator)
- **Research Associate** - “Development of Uniform Standards for Allowable Lane Closure (Project 2007-06)” funded by the New Jersey Department of Transportation for the period of 01/2007- 08/2008. (Co-principal investigator)
- **Research Associate** - "Jersey City/Newark Urban Area Security Initiative Regional Evacuation Plan" funded by the US Department of Homeland Security for the period of 01/2008 - 01/2010.
- **Research Associate** - “Microscopic Simulation of Garden State Parkway / New Jersey Turnpike –Phase 1 & 2” funded by New Jersey Turnpike Authority for the period of 09/2005- 04/2010. (Co-principal investigator)

- **Research Associate** - “Simulation and Analysis of Clark Circle - Exit 135 of Garden State Parkway” funded by New Jersey Turnpike Authority for the period of 09/05- 01/06.
- **Research Associate** - “Cost of Transporting People in New Jersey – Phase 2.” funded by New Jersey Department of Transportation for the Period of 1/05-8/06.
- **Research Associate** “Operational Improvements at Traffic Circles” funded by New Jersey Department of Transportation for the Period of 1/03-8/05
- **Research Associate** - “Evaluation Study of New Jersey Turnpike’s Value Pricing Initiative” funded by FHWA for the Period of 1/02-5/05.
- **Research Assistant** - “Evaluation of Incident Management Strategies.” funded by New Jersey Department of Transportation and USDOT (CAIT) for the period 6/1/00-6/1/02.
- **Research Assistant** - “South Jersey Motorist Information System.” funded by New Jersey Department of Transportation for the period 5/1/00- 1/30/02
- **Research Assistant** - “Simulation of an Intelligent Transportation Systems Priority Corridor in New Jersey.” funded by New Jersey Department of Transportation and USDOT (CAIT) for the period 6/1/00-5/31/02.
- **Research Assistant** “Cost of Transporting People in New Jersey-Phase 1.” funded by USDOT University Transportation Research Center (UTRC) and New Jersey Department of Transportation for the period 10/1/99-9/1/00.

## PEER REVIEWED JOURNAL PUBLICATIONS & BOOK CHAPTERS

- Ozbay, K., **Bartın, B.** and Berechman, J. "Estimation and Evaluation of Full Marginal Costs of Highway Transportation in New Jersey", *Journal of Transportation and Statistics*, Vol. 4, No.1, April 2001.
- Ozbay, K. and **Bartın, B.** "Incident Management Simulation" *SCS Simulation Journal*, Vol. 79, No. 2, February 2003, pp. 69-82.
- Ozbay, K. and **Bartın, B.** "Estimation of Economic Impact of V.M.S. Route Guidance using Micro Simulation". Chapter 11 in *Economic Impacts of Intelligent Transportation Systems: Innovations and Case Studies*. Research in Transportation Economics. Vol. 8, pp. 211-238, 2004.
- Ozbay, K., **Bartın, B.** and Chien, S. “South Jersey Real-Time Motorist Information Systems: Theory and Practice” [\*Transportation Research Record: Journal of the Transportation Research Board\*](#). No. 1886, pp. 68-75, 2004.
- **Bartın, B.**, Ozbay, K., Yanmaz-Tuzel, O. and List, G. “Modeling and Simulation of Unconventional Traffic Circles.” [\*Transportation Research Record: Journal of the Transportation Research Board\*](#). No. 1965, pp. 201-209, 2006.
- Ozbay, K., **Bartın, B.**, Yanmaz-Tuzel, O., Berechman, J., “Alternative Methods for Estimating Full Marginal Costs of Highway Transportation”, *Transportation Research Part A*, Vol. 41, pp. 768-786, 2008. **TOP 25 hottest articles of Transportation Research Part A for April-June 2007.**
- **Bartın, B.**, Ozbay, K. and Iyigun, C. "Clustering-based Methodology for Determining Optimal Roadway Configuration of Detectors for Travel Time Estimation." [\*Transportation Research Record: Journal of the Transportation Research Board\*](#). No. 2000, pp. 98-105, 2008.
- Ozbay, K., Yanmaz-Tuzel, O., Mudigonda, S., **Bartın, B.**, “Evaluating Highway Capacity Investments using a GIS-based tool – Trip-based Full Marginal Cost

Approach”, [\*Transportation Research Record: Journal of the Transportation Research Board\*](#). No. 2024, pp. 44-53, 2008.

- **Bartın, B.**, Mudigonda, S. and Ozbay, K. "Estimation of the Impact of Electronic Toll Collection on Air Pollution Levels using Microscopic Simulation Model of a Large-Scale Transportation Network." [\*Transportation Research Record: Journal of the Transportation Research Board\*](#). No. 2011. (2008). pp.68-77.
- Ozbay, K., Yang, H., **Bartın, B.** and Mudigonda, S. "Derivation and Simulation Based Validation of a New Surrogate Safety Measure." (2008). [\*Transportation Research Record: Journal of the Transportation Research Board\*](#). Vol. 2083. pp. 105-113.
- Ozbay, K., Xiao, W, Jaiswal, G., **Bartın, B.**, Kachroo, P. and Baykal-Gursoy, M. "Evaluation of Incident Management Strategies Using an Integrated Traffic/Incident Management Simulation" World Review of Intermodel Transportation Research. Vol 2. No:2/3, pp. 155-186, 2009.
- **Bartın, B.** and Ozbay, K. "Evaluation of Travel Time Variability in New Jersey Turnpike - a Case Study" *IEEE Transactions on Intelligent Transportation Systems*. Vol. 11, No. 1, 2009.
- Iyer, S., Ozbay, K. and **Bartın, B.** "Ex Post Evaluation of Calibrated Simulation Models of Significantly Different Future Systems". [\*Transportation Research Record: Journal of the Transportation Research Board\*](#). No. 2161, pp. 49-56, 2010.
- Yang, H., Ozbay, K. and **Bartın, B.** (2011) "Enhancing the Data Quality of Infrared-based Automatic Pedestrian Sensors Using a Nonparametric Statistical Method" [\*Transportation Research Record: Journal of the Transportation Research Board\*](#) (In Press)
- Berechman, J., **Bartın, B.**, Yanmaz-Tuzel, O. and Ozbay, K. "The Full Marginal Costs of Highway Travel: Methods and Empirical Estimation for North America" Handbook in Transport Economics - Chapter 12. Editors: Andre de Palma, Robin Lindsey, Emile Quinet and Roger Vickerman, 2011.
- **Bartın, B.**, Ozbay, K. and Mudigonda, S. (2012)"A GIS-based Interactive Lane Closure and Traffic Information Tool" [\*Transportation Research Record: Journal of the Transportation Research Board\*](#). No. 2272, Transportation Research Board of the National Academies, Washington, D.C., 2012, pp. 44–55.
- Li, J., Ozbay, K., **Bartın, B.**, Iyer, S. and Carnegie, J. (2013) "Empirical Evacuation Response Curve During hurricane Irene in Cape May, New Jersey" [\*Transportation Research Record: Journal of the Transportation Research Board\*](#). Vol. 2272. pp. 44-55.
- Yang, H., Ozbay, K. and **Bartın, B.** (2013) "Effect of Removing Freeway Mainline Barrier Toll Plazas on Safety " [\*Transportation Research Record: Journal of the Transportation Research Board\*](#). Vol. 2324. pp. 101-109.
- Yang, H., **Bartın, B.** and Ozbay, K. (2013) "Use of Sensor Data to Identify Secondary Crashes on Freeways " [\*Transportation Research Record: Journal of the Transportation Research Board\*](#). Vol. 2396. pp. 82-92.
- Ozbay, K., **Bartın, B.** Mudigonda, S., Iyer, S. (2013) "ASSIST-ME Post-processing Tool for Transportation Planning Model Output" [\*Transportation Research Record: Journal of the Transportation Research Board\*](#). Vol. 2399. pp. 63-73.
- Yang, H., **Bartın, B.**, Ozbay, K. (2014) "Mining the Characteristics of Secondary Crashes on Highways." *Journal of Transportation Engineering*. Vol. 10. Issue 4.

- Yang, H., **Bartın, B.** and Ozbay, K. (2014) “Investigating Motorists’ Behaviors in Response to Supplementary Traffic Control Devices at Land Surveying Work Sites” *Traffic Injury Prevention*. Vol 15. pp. 424-430.
- Yang, H., Ozbay, K., Bartın, B. and Ozturk, O. (2014) “Assessing the Safety Effects of Removing Highway Mainline Barrier Toll Plazas” *Journal of Transportation Engineering*. [http://dx.doi.org/10.1061/\(ASCE\)TE.1943-5436.0000681](http://dx.doi.org/10.1061/(ASCE)TE.1943-5436.0000681).
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## SELECTED CONFERENCE PROCEEDINGS

- **Bartın, B.** (2013) "Life Cycle Cost Analysis of Hybrid Bus Deployment on Transit Lines" Presented at the 92<sup>nd</sup> Annual Conference of the Transportation Research Board.
- Ozturk, O., Ozbay, K., Yang, H. and **Bartın, B.** (2013) "Crash Frequency Modeling for Highway Construction Zones" presented at the Transportation Research Board 92<sup>nd</sup> Annual Meeting, January 2013.
- **Bartın, B.**, Cavus, O. and Ozbay, K. (2011) “Validation of Traffic Simulation Models Using Reinforcement Learning” presented at the Transportation Research Board 90<sup>th</sup> Annual Meeting, January 2011.
- Yang, H., Ozbay, K. and **Bartın, B.** (2011) “Enhancing the Data Quality of Infrared-based Automatic Pedestrian Sensors Using a Nonparametric Statistical Method” presented at the Transportation Research Board 90<sup>th</sup> Annual Meeting, January 2011.
- **Bartın, B.**, Ozbay, K. and Jahan, N. (2011) “Benefit Cost Analysis of Highway Investment Projects Using Regional Transportation Planning Models” presented at the Transportation Research Board 90<sup>th</sup> Annual Meeting, January 2011.
- H. Yang, K. Ozbay, and **B. Bartın** (2010). Investigating the Performance of Automatic Counting Sensors for Pedestrian Traffic Data Collection, Paper ID C5-02147. In Selected Proceedings of the 12th World Conference on Transport Research Society, ISBN 978-989-96986-1-1 (Editors: J. Viegas and R. Macário), Lisbon, Portugal, July 11-15.
- Ozbay, K., Yang, H., and **Bartın, B.**, (2010) “Calibration Of An Infrared-based Automatic Counting System for Pedestrian Traffic Flow Data Collection”. Presented at the Transportation Research Board 89<sup>th</sup> Annual Meeting, January 2010.
- Mudigonda, S., **Bartın, B.** and Ozbay, K. (2009). "Microscopic Modeling of Lane Selection and Lane Changing at Toll Plazas." Presented at the Transportation Research Board 88th Annual Meeting, January 2009.
- Yang, H., **Bartın, B.** and Ozbay, K. (2009) Derivation and Variability Test of a New Hybrid Indicator for Traffic Conflicts Diagnosis. Presented at the Transportation Research Board 88th Annual Meeting, January 2009.
- **Bartın, B.** and Ozbay, K. (2008) “Comparison of Tolls with Estimated Full Marginal Costs: Theory meets Reality” Presented at the Transportation Research Board 87<sup>th</sup> Annual Meeting, January 2008.
- Ozbay, K., Yang, H., **Bartın, B.** and Mudigonda, S. (2008) "Derivation and Simulation Based Validation of a New Surrogate Safety Measure." Presented at the Transportation Research Board 87<sup>th</sup> Annual Meeting, January 2008.
- Yanmaz-Tuzel, O., Ozbay, K., Mudigonda, S., **Bartın, B.** (2008) “Quantification of Possible Impacts of Capacity Expansion Projects on Transportation Costs via Trip-based Full Marginal Cost Estimation Methodology”, Presented at the Transportation Research Board 87th Annual Meeting, January 2008.

- Ozbay, K. and **Bartın, B.** “Simulation Model Development and Analysis of an Unconventional Traffic Circle” Presented at the World Conference of Transport Research Conference, Berkeley, USA, 2007.
- Ozbay, K., Yanmaz-Tuzel, O., **Bartın, B.** and Mudigonda, S “Evaluating Highway Capacity Investments using a GIS-based tool – A Network-wide Full Marginal Cost Approach” Presented at the World Conference of Transport Research Conference, Berkeley, USA, 2007.
- Yanmaz-Tuzel, O., Ozbay, K., Mudigonda, S., **Bartın, B.**, “A GIS-Based Tool for the Estimation of Network-wide Full Marginal Cost of Highway Transportation”, INFORMS, November 5-8 2006, Pittsburgh.
- Ozbay, K., Mudigonda, S. and **Bartın, B.** “Microscopic Simulation and Calibration of an Integrated Freeway and Toll Plaza Model.” Presented at the 86<sup>th</sup> TRB Annual Conference, 2006, Washington, D.C.
- Ozbay, K., **Bartın, B.**, Rathi, N. and Yanmaz-Tuzel, O. “Modeling and Simulation of an Unconventional Traffic Circle”. 8<sup>th</sup> International IEEE Conference on Intelligent Transportation Systems, Vienna, Austria, 2005.
- Ozbay, K., **Bartın, B.**, and Berechman, J. “Estimation and Evaluation of Full Marginal Costs of Highway Transportation in New Jersey”, CD-Rom Pre-Prints of 10<sup>th</sup> World Conference on Transportation Research, Istanbul, Turkey. July 2004.
- Ozbay, K. and **Bartın, B.** “Incident Management Simulation””, 10<sup>th</sup> World Conference on Transportation Research, Istanbul, Turkey. July 2004.
- Ozbay, K. and **Bartın, B.** “Real-time Motorist Information Systems: Theory vs. Practice”, 10<sup>th</sup> World Conference on Transportation Research, Istanbul, Turkey. July 2004.
- Ozbay, K. and **Bartın, B.** “Effective and Timely Evacuation of People Using the Highway Infrastructure” IEEE Spring 2003 Conference on Technologies for Homeland Security, May 7-8, 2003.

## COMPUTER SKILLS

- PARAMICS microscopic traffic simulation software
- C, FORTRAN, MATLAB, Visual Basic, AVENUE programming languages
- ArcView geographic information systems software
- TRANSCAD, CUBE planning software
- SYNCHRO, HCS 2010 traffic analysis tools, Stata Statistics Software
- ARENA simulation software and SIMAN computer simulation language