

## **P. Christopher Zegras**

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### **Current Position**

**MIT – Department of Urban Studies and Planning, Cambridge, MA**  
*Assistant Professor of Urban Planning and Transportation, 8/05 - present*

- teaching graduate-level courses in urban transportation planning, statistics, and comparative cases in land use and transportation.

### **Research, Teaching & Professional Experience**

**Research and Strategic Planning Activities** (independent consulting), Cambridge, MA  
9/01-present

- contributing to analysis of short- and medium-term projects to reduce transportation greenhouse gas emissions in Quito, Ecuador;
- served on an international panel to review transportation proposals to the Global Environment Facility (GEF) from Latin America and the Caribbean, for the World Bank;
- carried out, for the National Environment Fund of Perú, training session for local government officials on the theory and evidence of the inter-relations between transportation and land use;
- provided technical critique – from a diagnostic and prescriptive perspective – on the treatment of mobility and land use issues within a regional development plan for the Bogotá, Colombia, Greater Metropolitan Area, for the United Nations Center for Regional Development;
- with international consortium, identified and evaluated transportation options for reducing greenhouse gas emissions via the Clean Development Mechanism (CDM), with support from Canadian International Development Agency;
- investigated, for State of Mexico, alternative financing schemes for a Bus Rapid Transit project in the Mexico City Metropolitan Area and conducted international comparative analysis of transportation planning processes to inform state-level transport planning reform;
- for World Business Council for Sustainable Development's Mobility Project, designed and managed research for transportation analyses of eight developing cities, identifying primary drivers of future urban transportation growth and policy implications of that growth;
- developed, for the German development agency (GTZ), a training module on private participation in urban transport infrastructure provision in developing countries;
- conducted organizational assessment and developed strategic plan for international non-governmental organization working on transport issues in developing countries.

**MIT – Department of Urban Studies and Planning, Cambridge, MA**

*Responsible Research Assistant* (Alliance for Global Sustainability, AGS), 9/02-12/04

- developed and co-managed a multi-university research project on the methodologies for designing and measuring sustainable urban development in Africa and South America.
- co-taught *Santiago Urban Planning Studio: Sustainable San Joaquín* (Spring 2003) which brought the AGS research into a practice-oriented class where graduate students developed planning recommendations for a de-industrializing area of Santiago de Chile.

**MIT – Laboratory for Energy and the Environment, Cambridge, MA**

*Research Associate, 2/01-9/02*

- co-supervised 8-person team working on transportation modeling and emission control strategy for Mexico City integrated air pollution reduction project;
- consulted for World Business Council for Sustainable Development on Mobility Project, including researching and writing sections of Mobility 2001 Report and co-leading strategy development for Mobility 2030 Phase;
- co-taught *Urban Transportation, Land Use, and the Environment* (Spring 2002), a case study-oriented course where graduate students addressed long-term problems related to transportation and land development in Santiago de Chile and Mexico City.

**MIT – Cooperative Mobility Program, Cambridge, MA**

*Research staff, 9/98-1/01*

- evaluated urban growth management potentials in Santiago, Chile, including detailed assessment of public finance system, land taxation structure, and institutional capabilities;
- collaborated on prototypical application of “scenario-planning” techniques to regional transportation planning;
- analyzed the financial potential for a car-sharing organization in Latin America;
- conducted transport system analysis for integrated local and global air pollution reduction project in Mexico City.

**World Bank – Latin America & Caribbean Regional Office; Finance, Private Sector, Infrastructure Division, Washington, DC**

*Summer Assistant, 6/99-8/99*

- evaluated world-wide experiences of using private sector concessions in urban transport infrastructure delivery;
- contributed to assessment of the privatization of Buenos Aires’ suburban rail, subway and roadway systems.

**International Institute for Energy Conservation – Latin America, Santiago, Chile**

*Transport Program Director, 5/96-5/98*

- conducted Electric Vehicle assessment for Chile, including energy and environment impacts;
- consultant to Government of Perú in development of transportation section of Climate Change Mitigation Plan;
- analyzed the impacts of used motor vehicle imports on fleet growth, emissions and energy use in Perú;
- responsible for all aspects of Program management, including: hiring, project development, budgeting.

**International Institute for Energy Conservation, Washington, D.C.**

*Transport Program Associate, 1/92-5/96*

- co-managed Transportation Program’s global activities, including: strategic planning, managing \$250,000 annual budget, project development, coordinating Program activities across four global offices;
- developed project analyzing financial, economic, and environmental costs of transportation in Santiago, Chile;
- managed multi-disciplinary analysis of urban transportation modeling for energy and emissions impacts;
- co-wrote final report from two-year project on urban transportation growth in four Asian cities.

**Memberships**

Member, Committee on Transportation in Developing Countries, Transportation Research Board, National Research Council (1997-present)

**Education**

Ph.D. in Urban and Regional Planning, **MIT**, Cambridge, MA

Master of Science in Transportation, **MIT**, Cambridge, MA

Master in City Planning, **MIT**, Cambridge, MA

Bachelor of Arts (Cum Laude) in Economics and Spanish, **Tufts University**, Medford, MA

**Peer-  
Reviewed  
Journal  
Articles**

Donoso, P., F. Martínez, C. Zegras. 2006. The Kyoto Protocol and Sustainable Cities: The Potential Use of the Clean Development Mechanism in Structuring Cities for “Carbon-Efficient” Transport. *Transportation Research Record* (forthcoming, accepted for publication).

Zegras, C. 2004. “The Influence of Land Use on Travel Behavior: Empirical Evidence from Santiago de Chile.” *Transportation Research Record 1898: Travel Demand and Land Use*.

Zegras, C., J. Sussman, C. Conklin. 2004. "Scenario Planning: A Proposed Approach for Strategic Regional Transportation Planning." *Journal of Urban Planning and Development*. Vol. 130 (1), American Society of Civil Engineers.

Zegras, C. 2003. "Financing Transport Infrastructure in Developing Country Cities." *Transportation Research Record No. 1839: Transportation Finance, Economics, and Economic Development*.

Zegras, C. 1998. "The costs of transportation in Santiago de Chile: analysis and policy implications." *Transport Policy*, Vol. 5, Winter.

Zegras, C. and T. Litman. 1997. "Cost Estimates of Transport Air Pollution in Santiago Chile." *Transportation Research Record No. 1587: Effects of Transportation on Energy and Air Quality*.

Zegras, C., D. Guruswamy and H. Malbrán. 1995. "Transport Modeling for Energy & Environment: United States Experience and Relevance to the Developing World." *Transportation Research Record No. 1487*.

S. Hall, C. Zegras, and H. Malbrán. 1994. "Transportation and Energy in Santiago, Chile." *Transport Policy*, Volume 1, No. 4, October.

Zegras, C. and M. Birk. 1993. "Moving Towards Integrated Transport Planning: Energy, Environment, and Mobility in Four Asian Cities." *Transportation Research Record*.

## Books & Chapters

Zegras, C., I. Poduje, W. Foutz, E. Ben-Joseph, O. Figueroa. 2004. "Indicators for Sustainable Urban Development." Chapter 7 in *From Understanding to Action: Sustainable Urban Development in Medium-Sized Cities in Africa and Latin America*, Springer.

Keiner, M., C. Zegras, W. Schmid, D. Salmerón (Editors). 2004 *From Understanding to Action: Sustainable Urban Development in Medium-Sized Cities in Africa and Latin America*, Springer.

Zegras, C. 2003. "Private Sector Participation in Urban Transport Infrastructure Provision." In *Sustainable Transport: A Sourcebook for Developing Cities*. Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Division 44, Environmental Management, Water, Energy, Transport.

Zegras, C. and R. Gakenheimer 2003. "Carsharing in Latin America." *World Transport Policy and Practice* (J. Whitelegg, G. Haq, Eds.). Earthscan/ Stockholm Environment Institute.

Gakenheimer, R., L. Molina, J. Sussman, C. Zegras, A. Howitt, J. Makler, R. Lacy, R. Slott, A. Villegas. 2002. "The MCMA Transportation System: Mobility and Air Pollution." Chapter 6 in *Air Quality in the Mexico Megacity: An Integrated Assessment*. Kluwer Academic Publishers.

Gakenheimer, R. and C. Zegras. 2001. "Personal Mobility in the Urbanized Developing World." Chapter 4 in *Mobility 2001: World Mobility at the End of the Twentieth Century and Its Sustainability*. World Business Council for Sustainable Development, Geneva.

Zegras, C. 1998. "Transporte Urbano e Impactos Locales: Economía, Contaminación, Bienestar." In *Transporte Urbano y Ambiente*. Consejo Nacional del Ambiente (National Environment Council of Peru), Lima.

Zegras, C. 1996. "Urban Transportation." Chapter 4 in *World Resources 1996-97*. Published for World Resources Institute, UNEP/UNDP, and World Bank by Oxford University Press.

Contributing Author. 1996. "Mitigation Options in the Transportation Sector." In *Climate Change 1995: Impacts, Adaptations and Mitigation of Climate Change: Scientific-Technical Analysis*. Published for Intergovernmental Panel on Climate Change (IPCC) by Cambridge University Press.

**Reports &  
Working  
Papers**

Browne, J., S. Winkelman, C. Zegras, E. Silsbe, E. Sanhueza. 2005. *Transportation and the Clean Development Mechanism: Experiences and Lessons from Chile*. International Institute for Sustainable Development, Winnipeg, Manitoba.

Editor. 2003. *Santiago Urban Planning Studio: Sustainable San Joaquín*. City Design and Development Group, Department of Urban Studies and Planning, MIT.

Gakenheimer, R. and C. Zegras. 2003. *Overview of Drivers of Travel Demand in Cities of the Developing World*. Report prepared for the World Business Council for Sustainable Development, Sustainable Mobility Project Phase III.

RAND Europe, R. Gakenheimer, C. Zegras. 2003. *Passenger and Freight Transport Demand*. Report for World Business Council for Sustainable Development, Sustainable Mobility Project Phase III.

Zegras, C. and R. Gakenheimer. 2000. *Urban Growth Management for Mobility: The Case of the Santiago, Chile Metropolitan Region*. Report prepared for the Lincoln Institute of Land Policy and the MIT Cooperative Mobility Program.

Zegras, C., J. Makler, R. Gakenheimer, A. Howitt, J. Sussman. 2000. "Metropolitan Mexico City Mobility and Air Quality." Paper prepared for the MIT Integrated Program on Urban, Regional And Global Air Pollution and the Cooperative Mobility Program.

Menckhoff, G. and C. Zegras. 1999. "Experiences and Issues in Urban Transport Infrastructure Concessions." World Bank Working Paper, TWU-38.

Zegras, C. and T. Litman. 1997. *An Analysis of the Full Costs and Impacts of Transportation in Santiago de Chile*. International Institute for Energy Conservation.

Zegras, C., W. Hook and T. Knecht. 1996. *The World Bank and Transportation*. Washington, DC. International Institute for Energy Conservation.

Zegras, C., D. Guruswamy, E. Miller, A. Tomazinis. 1995. *Modeling Urban Transportation Emissions and Energy Use: Lessons for the Developing World*. International Institute for Energy Conservation.

Zegras, C. and T. Semans. 1995. "Shifting the Paradigm: Public Consultation on the World Bank Transport Sector Review." International Institute for Energy Conservation.

Birk, M. and C. Zegras. 1993. *Moving Toward Integrated Transport Planning: Energy, Environment, and Mobility in Four Asian Cities*. International Institute for Energy Conservation.

**Conference  
Proceedings**

Zegras, C. 2001. "Mecanismos Financieros Aplicados al Desarrollo Urbano como Consecuencia de sus Impactos en los Sistemas de Transporte: el Caso de Santiago de Chile." In the *Actas del XI Congreso Latinoamericano de Transporte Público y Urbano*, Havana, Cuba, September.

Rivasplata, C. and C. Zegras. 1998. "The Role of Smart Cards in Public Transport Integration: Lessons for Santiago." In *Urban Transport Policy: A Sustainable Development Tool* (Freeman and Jamet, Eds.). Rotterdam: Balkema.

Zegras, C. 1997. "Los Costos Estimados de Accidentes de Tránsito en Santiago de Chile, 1994." In *Actas del Octavo Congreso Chileno de Ingeniería de Transporte* (T. Galvéz, M. Munizaga, Eds.), November.

Zegras, C. and D. Guruswamy. 1995. "Modelación de Emisiones de Transporte Vial en los Estados Unidos: La Práctica Corriente y Mejoramientos Necesarios." In *Actas del VII Congreso Chileno de Ingeniería de Transporte* (F. Martínez, Ed.). October.

Zegras, C. and W. Hook. 1995. "Transportation, Energy and Environment in Hungary: The Role

of Government Policies and the World Bank.” In *Proceedings of the 1995 Summer Study – European Council for an Energy Efficient Economy*.

### Additional Conference Presentations

“Transportation and Air Quality in Chile: Law versus Practice.” 2005. Presented at the 84<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC, January.

“Transportation Finance in Developing Cities: A View of the Mexican Mega-City.” 2004. Presented at the Symposium Urban Road and Public Transit: Who Must Pay? As part of XVIIth *Entretiens Jacques Cartier*, Montreal, Quebec, 7 October.

“The Influence of Land Use on Travel Behavior: Empirical Evidence from Santiago de Chile.” 2004. Presented at the 83<sup>rd</sup> Annual Meeting of the Transportation Research Board, Washington, DC, January.

“Financing Transport Infrastructure in Developing Country Cities: Evaluation of and Lessons from the Nascent Use of Impact Fees in Santiago de Chile.” 2003. Presented at the 82<sup>nd</sup> Annual Meeting of the Transportation Research Board, Washington, DC, January.

“Scenario Planning: A Proposed Approach for Strategic Regional Transportation Planning.” 2002. Presented at the Annual Meeting of the Transportation Research Board, Washington, DC, January. With J. Sussman, C. Conklin.

“Motorización Urbana y sus Impactos: Implicaciones para la Formación Institucional.” 2001. Presented at the Scientific-Technical Meeting of CODATU (Cooperation for the Development and Improvement of Urban and Suburban Transport), Havana, Sept. With R. Gakenheimer.

“Buses Electricos para Santiago.” 1997. Presented at the VIII Congreso Chileno de Ingeniería de Transporte, Santiago, October.

“Urban Transport, Health, and Environment in Santiago de Chile.” 1997. Presented at the Annual Meeting of the Transportation Research Board, Washington, DC. January.

“Transportation Cost Analysis and Non-Motorized Transportation.” 1997. Presented at the Annual Meeting of the Transportation Research Board, Washington, DC. January.

“Costos Estimados de Contaminación del Aire Debido a Transporte en Santiago de Chile.” 1996. Presented at the IX Congreso Panamericano de Ingeniería del Tránsito y Transporte, Havan Cuba, November.

“Los Costos Estimados de Contaminación Atmosférica por Transporte en Santiago de Chile.” 1996. Presented at the World Congress on Air Pollution in Developing Countries, San Jose, Costa Rica, October.

“Hacia Una Estructura para el Análisis de los Costos Totales de Transporte.” 1996. Presented at the VIII Congreso Latinoamericano de Transporte Público y Urbano (CLATPU), Curitiba, Brazil, April.

“El Transporte y Energía.” 1994. Presented at the VII Congreso Latinoamericano de Transporte Público y Urbano (CLATPU), Buenos Aires, October.

### Invited Presentations

“Transporte y Uso de Suelo: Teoría y Ejemplos.” 2005. Presented at the International Conference, *Transporte Urbano y Usos de Suelo*, organized by the Peruvian National Environment Fund (FONAM) and sponsored by the World Bank, Lima, Perú, 1 December.

“Aspectos técnicos: Desde la perspectiva de movilidad y uso de suelo.” 2005. Presented at the International Forum, *De las ciudades a las regiones - Desarrollo regional integrado en Bogotá – Cundinamarca*, sponsored by the United Nations Center for Regional Development (UNCRD), Bogotá, Colombia, 28 November.

- “Evolving Metropolitan Structures and their Impact on Personal Mobility. 2005. Presented at *Critical Barriers to a Sustainable Energy Future*, Technical Meeting of the Alliance for Global Sustainability, Chalmers University, Goteborg, Sweden, 8 November.
- “Transportation Finance in the Mexico Mega-City Charting a Path towards Sustainability?” 2005. Presented at Workshop 126 *Sustainable Transport in Latin America: From Theory to Practice*, held at the Annual Meeting of the Transportation Research Board, January.
- “Towards Sustainable Urban Mobility: Exploring the Land Use-Transportation System in Santiago de Chile.” 2004. Presentation at the Conference on *Sustainability and Urban Growth in Developing Countries*, Monte Verità, Ascona, Ticino, Switzerland, 2 November.
- “Location Efficiency and the Clean Development Mechanism (CDM): The Potential for Reducing Transportation Greenhouse Gas Emissions by Changing Patterns of Urban Development.” 2004. Presentation at International Seminar on *Transportation and the Clean Development Mechanism*, sponsored by the Canadian International Development Agency, UN Economic Commission for Latin American and the Caribbean, Santiago, Chile, 25 August.
- “*Dos Ciudades Latinoamericanas*: Perspectives on and Prospects for Sustainable Urban Mobility.” 2004. Presentation at Sustainable Urban Transportation Panel Session at the *Boston Social Forum*, U. Mass-Boston, 25 July.
- “Hacia una San Joaquín Sustentable: Resultados del Taller de Planificación Urbana.” 2004. Presentation at *Expovivienda*, Santiago, Chile, 30 April.
- “Megacities, Developing Cities, and Sustainable Transportation.” 2003. Keynote Presentation at the Innovative Transport Strategies Working Group at the Conference *Megacities III: Action Models and Strategic Solutions*. Konrad Adenauer Foundation, Schloss Eicholz, Sankt Augustin, Germany, November.
- “Developing Country Cities: Towards a Sustainable Mobility?” 2003. Presentation at *Sustainable Mobility Meeting*, British Petroleum, London, October.
- “Potentials for Integrating Travel Forecasting Models with Land Use & Emissions Models: Relevance to the Mexico City Project.” 2002. Seminar for the MIT Integrated Program on Local, Regional and Global Air Pollution, Cambridge, May.
- “Urban Mobility in the United States: Trends, Challenges & Where We Stand.” 2002. Presented at the Working Group *The Future of Mobility – Transportation*, Annual Meeting of the Alliance for Global Sustainability (AGS), San Jose, Costa Rica, March.
- Panel Session on Transportation and Urban Development, as part of Symposium on Transportation and Sustainability. 2002. Annual Meeting of the Transportation Research Board, Washington, DC, January.
- “Telecommunications and Travel.” 2001. Cooperative Mobility Program Sponsor Meeting, Massachusetts Institute of Technology, Cambridge, June.
- “Transportation and Mobility.” 2000. Presented at the Third US-Mexico Joint Workshop, Cuernavaca, Mexico, June.
- “Concessions for Urban Transportation Infrastructure in Developing Countries.” 1999. Presented at United Nations Environment Program (UNEP) Regional Workshop *Deals on Wheels: Sustainable Transportation Initiatives in Developing Countries*, San Salvador, El Salvador, July.
- “Transporte, Mantenimiento, y Ciudades Sostenibles.” 1997. Presented at HABITAT Seminar, Organized by Coalition of Peruvian NGOs, Lima, Perú, October.
- “Transporte Urbano, Economía, y Medio Ambiente 1997.” Presented at the IV Conferencia LAC

de ONGs de Medio Ambiente Urbano, March.

“Transporte de Pasajeros y Medio Ambiente en Santiago de Chile.” 1996. Presented at the Seminar Transporte y Medio Ambiente, National Environment Council of Peru, Lima, August.

“Energía y Transporte.” 1996. Presented at the Segundo Taller Latinoamericano de Organizaciones no Gubernamentales Sobre Cambios Climáticos, Colonia, Uruguay, April.

“Sustainable Santiago: An Urban Transportation Vision.” 1995. Presented at the Cooperative Housing Foundation’s Workshop on Partnerships for Livable Urban Environments, Washington, DC, November.