

# **Automated People Movers and Automated Transit Systems 2016**

**Innovation in Rapidly Urbanizing World**

**Toronto, Ontario, Canada  
17-20 April 2016**

**Editors:**

**William J. Sproule**

ISBN: 978-1-5108-2389-1

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2016) by American Society of Civil Engineers  
All rights reserved.

Printed by Curran Associates, Inc. (2016)

For permission requests, please contact American Society of Civil Engineers  
at the address below.

American Society of Civil Engineers  
1801 Alexander Bell Drive  
Reston, VA 20191  
USA

Phone: (800) 548-2723  
Fax: (703) 295-6333

[www.asce.org](http://www.asce.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2633  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# Contents

## *Airports*

<b>Tampa Airport APM Project—Fast Track Approach.....</b>	<b>1</b>
Guadalupe G. Murillo Jr., Larry Coleman, and Brian D. Rumble	
<b>Houston IAH Airport Inter-Terminal Train Alternatives Analysis Project.....</b>	<b>14</b>
Laura Espinoza	
<b>The Return of the Cable Car to Oakland.....</b>	<b>26</b>
Alfred Stefan Fruehwirth and Michael A. Forte	
<b>The Aeromovel Project for Airport Applications.....</b>	<b>41</b>
D. Abs, M. Coester, J. Detoni, D. Mori, S. Castaneda, H. Kasper, and E. Reis	
<b>APM Line Extension and FBTC Replacement with CBTC at Hong Kong International Airport.....</b>	<b>57</b>
Tsutomu Hoshii, Kunihiro Tatecho, Yoshio Oda, and Kento Arkawa	
<b>Airport Parking Shuttle Comparison: Bus vs. Personal Rapid Transit.....</b>	<b>63</b>
Peter J. Muller	
<b>bCounted: Automatic People Counting and People Flow Management at Airports .....</b>	<b>74</b>
Horst Gerland and Ian McDonald	

## *Major Activity Centers*

<b>Mirage-TI Tram End of Life Overhaul .....</b>	<b>82</b>
J. David Mori and Steven M. Castaneda	
<b>Pearlridge Monorail: Upgrading to Full Automation .....</b>	<b>88</b>
Steven M. Castaneda, J. David Mori, and Kendall Doi	
<b>Stanley Dashew, the Dashaveyor, and the Toronto Zoo Domain Ride.....</b>	<b>100</b>
William J. Sproule	
<b>Improving Public Transport Quality Using Accelerating Moving Walks .....</b>	<b>107</b>
Miguel Angel González Alemany	

*Planning and Engineering*

- APM 300—Transition from Prototype to Project .....**121  
Kevin Lewis

- Thermal Expansion Management in Aluminum/Stainless Steel Power Rail Systems: Design Considerations for Optimal System Performance .....**132  
R. M. Frost and R. H. Knox

- An Innovative System to Detect Obstacles on Rail Tracks.....**146  
S. Scholz

- Elevated Guideway Design Considerations.....**156  
Brian K. Adams, John A. Heath, and Bruno C. Barros

- Preparing for Automated Roadway Technology Impacts on Guideway Transit.....**164  
J. Sam Lott and Douglas Gettman

*Train Control*

- Upgrading Automatic Train Control Systems.....**179  
Mark V. Incorvati

- Next Generation Train Control (NGTC) Applicability for APMs.....**187  
Joerg Schuette

- Efficiency Improvement of Automated Transit Systems Compared to Conventional Train Operation .....**197  
Sven Scholz

- Smart Rail Management and Lessons Learned .....**206  
Dirk Guijt and Frank Culver

- The Baltimore Metro CBTC Project .....**214  
Tedd L. Snyder

*Urban Systems*

- APM and Monorail for Urban Applications .....**222  
Tim Zhang

- Miami Metromover System Expansion Study .....**240  
J. A. Capelli and W. Fernandez

<b>The Detroit People Mover with a Canadian Connection .....</b>	<b>252</b>
William J. Sproule	
<b>A Case Study of Cable-Propelled Transit to Be an Alternative Application to Conventional Means of Public Transportation .....</b>	<b>262</b>
J. Winter, I. Sesma, and M. Funda	
<b>Understanding the Owner's Perspective When Preparing Automated Transportation System Proposals .....</b>	<b>278</b>
Jefferson H. Davis, Hassan Younis, and Justin Garrod	
<b>Operational Strategies from Personal to Mass Transit.....</b>	<b>288</b>
Ingmar Andreasson	