

santiago chile IBTTA Technology Workshop November 12-14, 2000

IBTTA International Bridge, Tunnel and Turnpike Association

MDX


Case Study in Conversion

All Electronic Open Road Tolling

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The MDX System

- 5 Expressways with only 4 tolling points
 - 2 bi-directional toll plazas
 - 2 one-directional toll plazas
- 32.1 center miles of road
- Major connections from east-west and north-south



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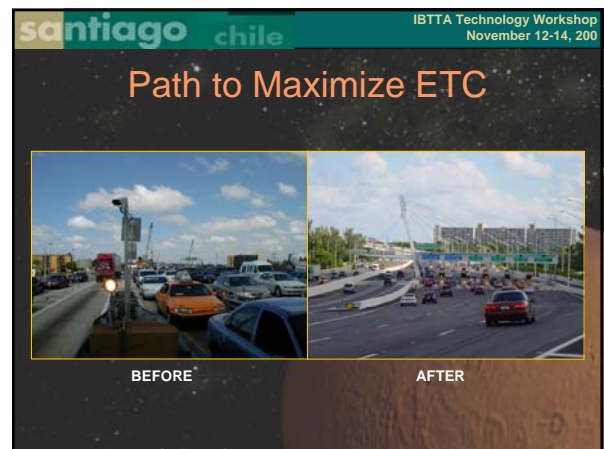
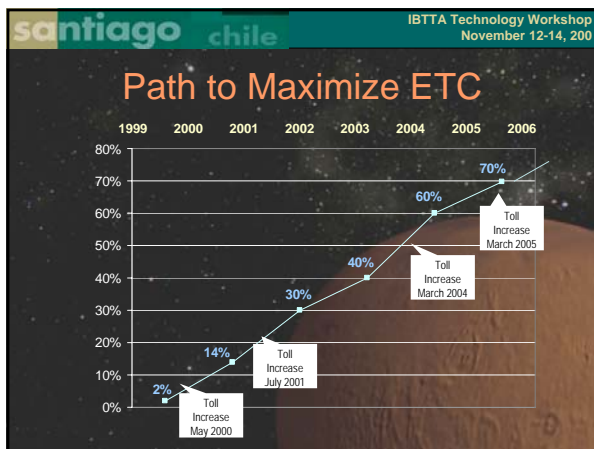
Existing Conditions

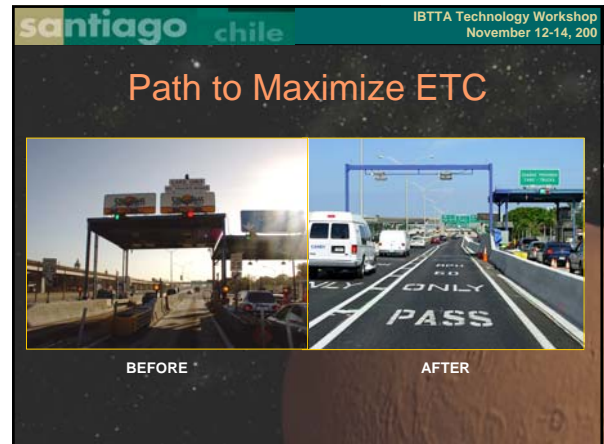
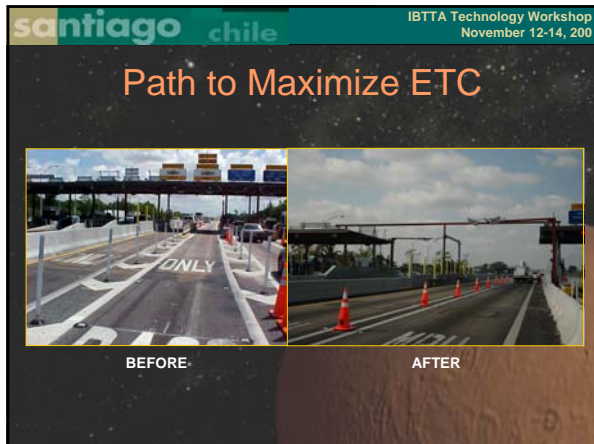
- 5 of the most heavily traveled expressways in Miami-Dade
- Urban expressway with limited right-of-way restricting ability to expand system
- Toll-free movements (28% of users pay 100% of the tolls)
- 35,000 new residents per year
- Need for increased revenue stream

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Plan of Action

- Closing the gap with all electronic ORT
 - **Making History** - Retrofitting existing toll collection system from cash-based to all electronic
 - Eliminating conventional toll plazas and constructing a series of gantries as tolling points to provide an open highway
 - Charging all drivers for the portion of the road they use

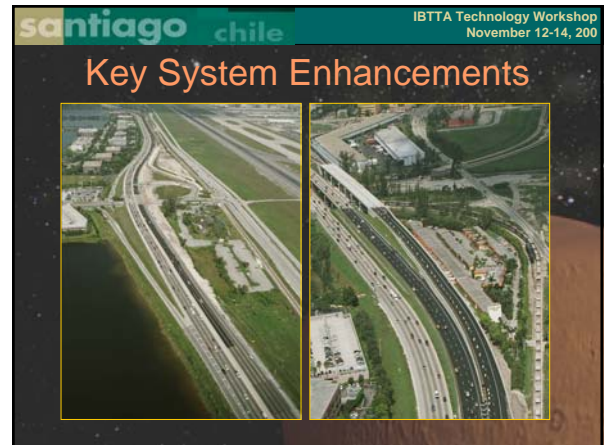




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Building the Foundation - Infrastructure

- Maximizing existing infrastructure to improve mobility
 - Interim projects that make significant improvements to operations at a relatively low cost
 - Addition of auxiliary lanes
 - Enhancements to existing interchanges



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Building the Foundation - Technology

- Making provisions for user-friendly technology
 - Support low-cost transponder – accessible to ALL
 - Make transponder use anonymous to protect user privacy
 - Accommodate rental car users and taxis
 - Accommodate tourists

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Building the Foundation - Communications

- Kick-off a multi-level, multi-year Public Outreach Program
 - Building public trust with information exchange
 - Communicate critical messages
 - ORT allows funding of future improvements
 - Economic development
 - Everyone to pay fair share
 - Address challenges
 - Drivers that have never paid will now pay something
 - Satisfy technology and business rules requirements

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Pilot Project

- SR 836 Extension
 - Test bed for:
 - Multi-lane ETC
 - Dual-protocol reader
 - Video tolling
 - Plate reader technology
 - Validation of the first all electronic toll road in Miami-Dade County
 - Show public how ORT works
 - Opens Summer of 2007



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SR 836 Extension



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ORT Implementation

- Maximizing resources
 - Add gantry installation to on-going ITS projects
 - Reduce procurement costs
 - Avoid conflicts of using two contractors in same project limits
 - Use design-build delivery to
 - Offset rapidly changing technology
 - Access contractor's expertise early in design stage
 - Design a modular, expandable, drop-in-place system

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ORT Implementation

- Summer 2007
 - Open SR 836 Extension as ORT (SunPass only)
- Fall 2007
 - Incorporate video tolling
- 2008-2010
 - SR 874/878/924 ORT system installation, test, burn-in, operations/ decommission cash toll plazas
- 2012
 - Initiate ORT operations/ decommission cash toll plazas SR 836 and SR 112

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Conclusion

- Maximizes through-put
 - Addition of auxiliary lanes to enhance flow of thru traffic
 - No stopping at toll plazas
- Maximizes Equity
 - All MDX customers pay their fair share for the portion they drive
- Provides full control of system (ORT/ITS)
 - Variable pricing
 - Toll adjustments by mile
 - Future opportunities for intermodal pricing strategies
- Maximizes Revenue Opportunities
 - Funding additional improvements
 - Continue to support MDX's mission of enhancing mobility and providing innovative solutions

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