

Freight Research at METRANS



UTC Freight Research Workshop

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Overview

- Goods movement and international trade
 - Ports, airports as trade nodes
 - Supply chains
- Urban, intra-metropolitan freight
- Multi-disciplinary
 - Modeling/optimization; logistics; economics; policy; environmental analysis
- About 50% of all METTRANS research

Summary: GM Projects

Year	GM projects	Total projects	GM % of total	GM funding
2005	6	9	67	\$563,685
2006	5	8	63	339,106
2007	10	15	67	1,455,710
2008	6	15	40	499,532
2009	4	14	29	331,983
2010	5	12	42	439,905

Total GM funding 2005 – 2010: \$3,629,921

Areas of Freight Research

- Reducing impacts
 - Congestion
 - Air pollution
- Increasing productivity
 - Port operations
 - Freight routing, optimization
- Modeling/simulation
 - Intra-urban freight flows
 - Port operations
 - Economic impact models
- Risks/impacts of disruptions

Examples

- Truck pricing
- Biofuels
- Port regulation impacts
- Chassis and container movements
- Dock operations simulation
- Regional impact models

Sample: 2009-2010 Projects

Project #	Univ/ dept.	PI	Title
10-06	USC PPD/ISE	Josh Newell, Mansour Rahimi	Moving containers efficiently with less impact
10-08	USC ISE	Maged Dessouky	Dynamic scheduling of trains in densely populated, congested areas
10-16	USC CS	Viktor Prasanna	Workflow synthesis and management for integrated traffic simulation
10-20	CSULB ME/CEE	Hamid Rahai, Antonella Sciortino	The effects of distortion on trajectory of diesel PM from mobile sources
10-26	CSULB CECS	Burkhardt Englert, Shui Lam	The impact of truck repositioning on congestion and pollution in the LA Basin

Collaboration and Coordination

- What we do
 - National Urban Freight Conference
 - Comparative ports research
 - Research results at major conferences
 - TRB, TRF, INFORMS
- What UTCs need
 - Venues for sharing research
 - Collaborative research partnerships

Port comparative research

- Purpose of research
 - Understand local impacts of port-related trade, mitigation strategies, policy and regulatory outcomes
 - Identify best practices
 - Develop stronger research base for port policy
- Areas of research
 - Port policies and regulations
 - Drayage trucking
 - Local environmental impacts
- Partners
 - Region 2 UTC for PANYNJ
 - Potential international partners

METRANS testbed initiative

- The METRANS virtual testbed
 - Simulation of LA/LB ports and surrounding area
 - Link different models: dock operations, truck routing, traffic micro-simulation, rail routing and scheduling
- Status
 - All submodels developed
 - Evaluating online access via METRANS website

Communications

- Monitoring the Ports Timeline
- Podcast
- Blog
- NUF



Thanks

