Overview

- Public Sector Transportation Research in Wisconsin
- Conceptual Proposal for the Great Lake Transportation Enterprise Institute
- How will the Public and Private Sectors Benefit from the Institute
Current Transportation Research Landscape in Wisconsin
Current Transportation Research

Madison

- Engine Research Center
- Resource Center on Impaired Driving
- Transportation Information Center-LTAP
- Engineering Professional Development
- Wisconsin Structures & Materials Testing Laboratory
- Grainger Center for Supply Chain Management
Current Transportation Research
Milwaukee

- VA Neuroscience Laboratories
- MCW - Vehicle Crashworthiness Laboratory
- Crash Injury Research and Engineering Network (CIREN) Center
- Center for Alternative Fuels
Current Transportation Research
Other Locations

- Highway Technician Training Program
- NextTrans Strategic Partner
# Funding Opportunities

## Public
- WisDOT
- USDOT
  - FHWA
  - NHTSA
  - RITA
- National Academies of Science
- National Science Foundation
- AASHTO
- NIH
- DOD/DOE
- US Access Board/ADA
- Homeland Security

## Private
- Consulting Partnerships
- Non-Profit Research
  - Professional Organizations
  - Trade Groups
  - Foundations
  - Research and Communication Org
- Power Companies
- Automotive Companies
- Auto Insurance Companies
- Product Development Companies
- Entrepreneurs
- Angel Investors
- Venture Capital
- Evaluation and Testing Services
- Royalties for licensed products
Areas of Opportunity

- More aggressive intra and interstate teaming
- Better collaboration with private sector
- Commercialization of products
- Product development
- Engineering and Science Consulting (especially beltway)
- Stronger National Wisconsin and Great Lake “Voice”
Potential Models

SC “New Carolina” Cluster Model

**RECRUIT**
- New companies locate to SC to be closer to clusters
- Customers & suppliers of cluster companies become strategic recruitment targets
- Leaders of cluster companies become the area’s best salespeople
- Institutional knowledge of the industry and industry trends are easier to access by recruiters

**EXPAND**
- Existing companies in SC grow because clusters are growing
- Development of supplier and talent bases
- Efficient knowledge transfer to industry
- Increase competitiveness of existing industry

**CREATE**
- Clusters improve the entrepreneurial environment
- New lines of business are more visible
- Supplier and talent base enables ease of transition for spin-offs and start-ups
- University research in clustered industry creates entrepreneurial opportunities
Potential Models

GOVERNANCE BOARD COMMITTEES

Federal Agencies

Local Agencies

Industry

Universities

International Partners

State DOTs
Conceptual Proposal for a Great Lakes Transportation Enterprise Institute
Great Lakes Transportation Enterprise
Institute “A Networking Enterprise”

URGENT NEED
REGIONAL CONTEXT
INDUSTRY PRESENCE
R & D THEMES
ORG. STRUCTURE
GLTEI
Great Lakes Transportation Enterprise Institute: The Urgent Need

SAVING LIVES

CREATING JOBS

GROWING WORKFORCE
Transportation and Jobs

- Highway Construction
- Transportation Management Technology
- Economic Development Through Highway Access
- Economic Development Through Transportation Services & Accommodations
- Trucking, Freight and Logistics
Great Lakes Transportation Enterprise Institute: A Regional Context

- **Megaregional Status & Connectivity**
  - “Caught in the Middle” Transportation References, University Regionalism
  - National Highway System “Hub”
  - Global Supply Chain “Link” – St Lawrence Seaway, US-Canada
  - High Speed Rail Development
HIGH-SPEED RAIL CORRIDOR DESIGNATIONS
Great Lakes Transportation Enterprise Institute: A Regional Context

- **Relevant Industry Presence**
  - WISDOT, SE Freeway Reconstruction, TDA Industry (design, build, materials)
  - Traffic Management & Safety (TAPCO, Adaptive, 3M, AAA, Insurance Industry)
  - Vehicles (Oshkosh Trucks, Harley, MGA Research)
  - Motive & Control Systems (Johnson Controls, Modine)
  - Freight & Logistics (Schneider)
  - Great Lakes Tourism
Great Lakes Transportation Enterprise Institute: The Economic Impetus – Industry Interest Areas

GREEN

- Materials & technologies: recycling & reuse
- Energy for transportation
  - Fuel cell & hybrid-electric
  - Traffic-adaptive engines
  - Green energy highway corridors
- Transportation services to support green energy
  (e.g., wind energy component shipment)
Great Lakes Transportation Enterprise Institute: The Economic Impetus – Industry Interest Areas

CYBER

- Simulated environment labs
  - Driver and vehicle simulation
  - Environmental simulation, e.g. wind tunnels
  - Materials testing

- Simulated operations
  - Highway, multimodal, intermodal traffic and logistics analysis
  - Infrastructure life-cycle modeling

- Transportation infrastructure & network management systems
  - Highway infrastructure & operations surveillance & data management
  - Emergency response and public safety systems & data management
Megaregional Transportation Research & Development

A. Regional & inter-regional surface transportation system planning, policy, & performance management

B. Surface transportation guideway, intersection, interchange, and intermodal facility design

C. Sustainable highway & transportation infrastructure materials & technologies

D. Advanced & accelerated transportation construction methods

E. Transportation facility & system maintenance & preservation

F. National highway system and intermodal operations & security
Southeastern Wisconsin Transportation Research & Development: A Possible Organizational Framework

- TAPCO
- Adaptive Traffic
- Harley Oshkosh Trucks
- Consultants
- WTDA, Contractors
- Schneider
- AAA
- Johnson Controls
- Lakeside
- MGA
- Spancrete
- Material & Testing
- MCW
- CIREN
- VA Neuro Lab
- NCAP Crash Rating Lab
- UWM
- CUTS/MOTIS
- Byproducts Reutilization
- Joint Materials Lab (concept)
- MQ
- Discovery Center
- Transportation Research Center
- McShane CEM Pgm
- MISTICS Cluster
- Other Midwest States & Regional Entities
- Wisconsin
  - DOT, DNR
  - Tourism
  - Commerce
  - Focus/Energy
  - Procure/Inst.
  - TOPS/CFIRE
- National Research
  - USDOT
    - FHWA
    - NHTSA
    - RITA
  - NSF
  - TRB
- Great Lakes Transportation Enterprise Institute
Regional “Fit” of Great Lakes Transportation Enterprise Institute

UW-Madison/CFIRE
UW-Platteville
UW-Superior

U of MN - CTS
UWM
MCW
MQ

U of MI - UMTRI

NU
Argonne Labs
UIC
UIC-U

(Ohio)
- Battelle

Purdue
- Nextrans
Southeastern Wisconsin Transportation Research & Development: A Possible Programmatic Framework

Collaboration Layers

Industry & Professional Community Interface
(Curriculum, Training Needs Assessment, Continuing Education)

Institutions
(Investigators, Staff, Students, Consultants, Agency Staff)
University Centers & Inter-organizational Institutes

Facilities
(Labs, Buildings, Offices, Server Hubs)

Transportation Network Cyber-Infrastructure
(Surveillance, Communications, Databases, Analytical Tools)
Illustrative Concepts: What If???

- Integrated Driver, Vehicle, and Crash Simulation
- Joint Materials Development & Testing Labs
- Cyber-Infrastructure Freeway Corridor Testbed: Operational & Structural (e.g., Zoo Interchange)
- Emergency Service & Transportation Management Interoperable Data System
- Commercial Vehicle Safety Systems & “Intellidrive” Testbed
Tentative Timeline

- October 501(c)(3) paperwork filing
- November 19 Transportation Industry Partners Workshop
- January Roll-Out (Potential coordination with TRB Annual Meeting)
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