

BUILDING THE GREAT LAKES TRANSPORTATION ENTERPRISE INSTITUTE

TDA Wisconsin Annual Meeting
Madison, Wisconsin
October 1, 2009

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



CFIRE



TRAFFIC OPERATIONS &
SAFETY LABORATORY



CMSC

construction and materials support center
university of wisconsin - 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



WHRP

Wisconsin Highway Research Program

Current Transportation Research Milwaukee



University of Wisconsin–Milwaukee
**Center for Urban
Transportation Studies**

UWM CENTER FOR BY-PRODUCTS UTILIZATION



- Center for Alternative Fuels

**TRANSPORTATION
RESEARCH
CENTER**

- VA Neuroscience Laboratories
- MCW - Vehicle Crashworthiness Laboratory
- Crash Injury Research and Engineering Network (CIREN) Center

**MILWAUKEE
INSTITUTE** 

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

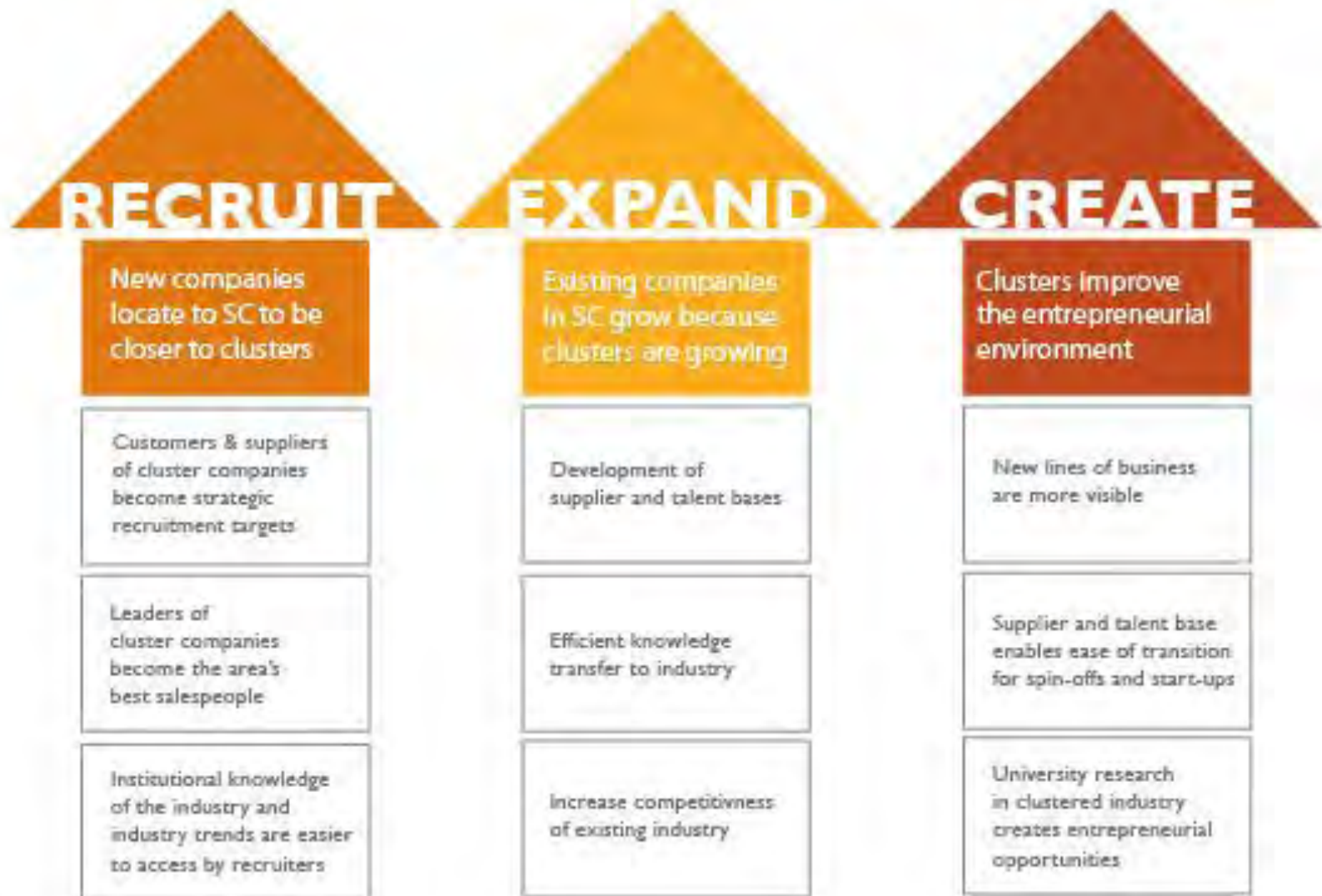
- Consulting Partnerships
- Non-Profit Research
 - Professional Organizations
 - Trade Groups
 - Foundations
 - Research and Communication Org
- Power Companies
- Automotive Companies
- Auto Insurance Companies
- Product Development Companies
- Entrepreneurs
- Angel Investors
- Venture Capital
- Evaluation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

Areas of Opportunity

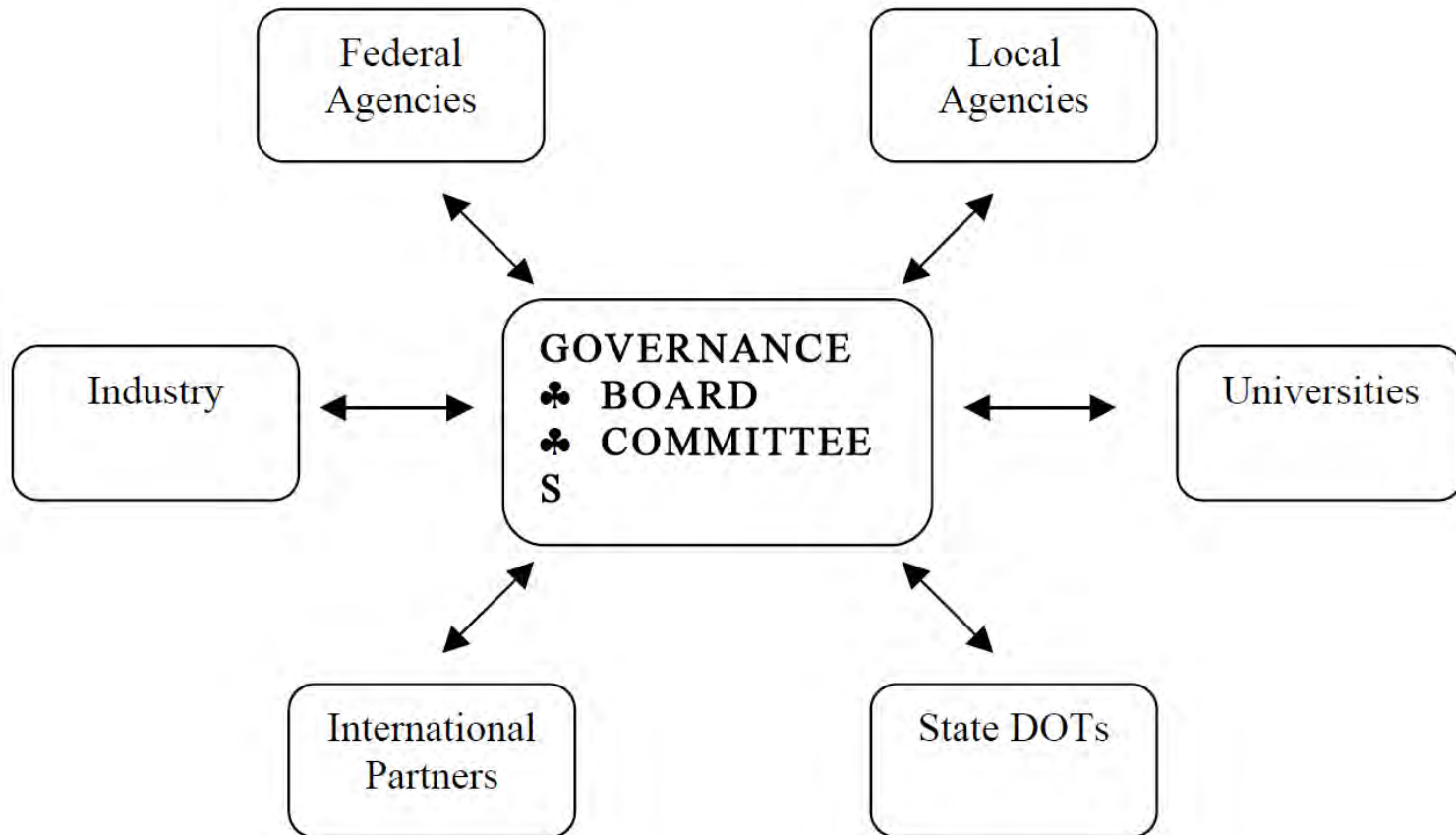
- More aggressive intra and interstate teaming
- Better collaboration with private sector
- Commercialization of products
- Product development
- Engineering and Science Consulting (especially beltway)
- Stronger National Wisconsin and Great Lake “Voice”

Potential Models

SC “New Carolina” Cluster Model



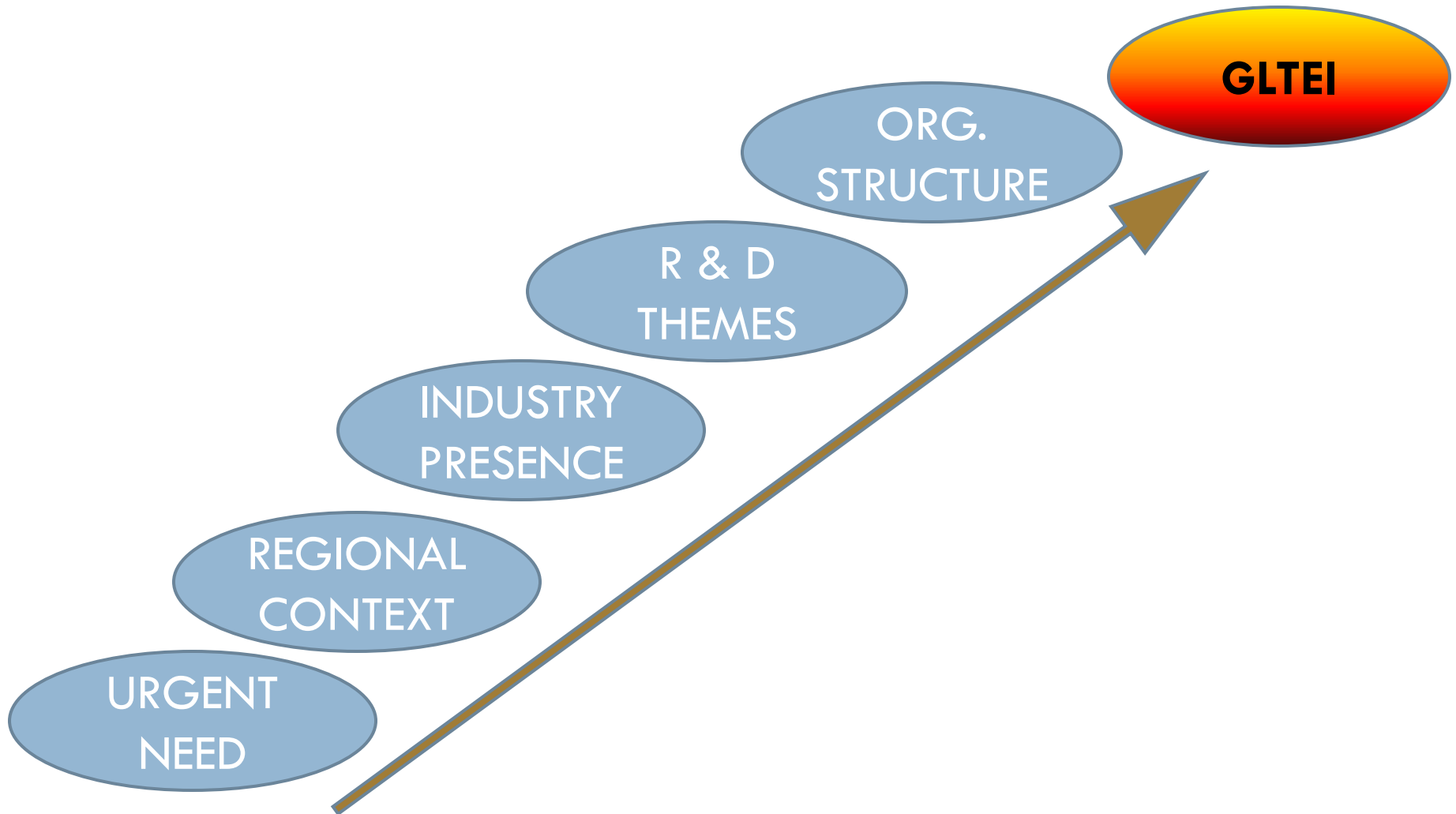
Potential Models



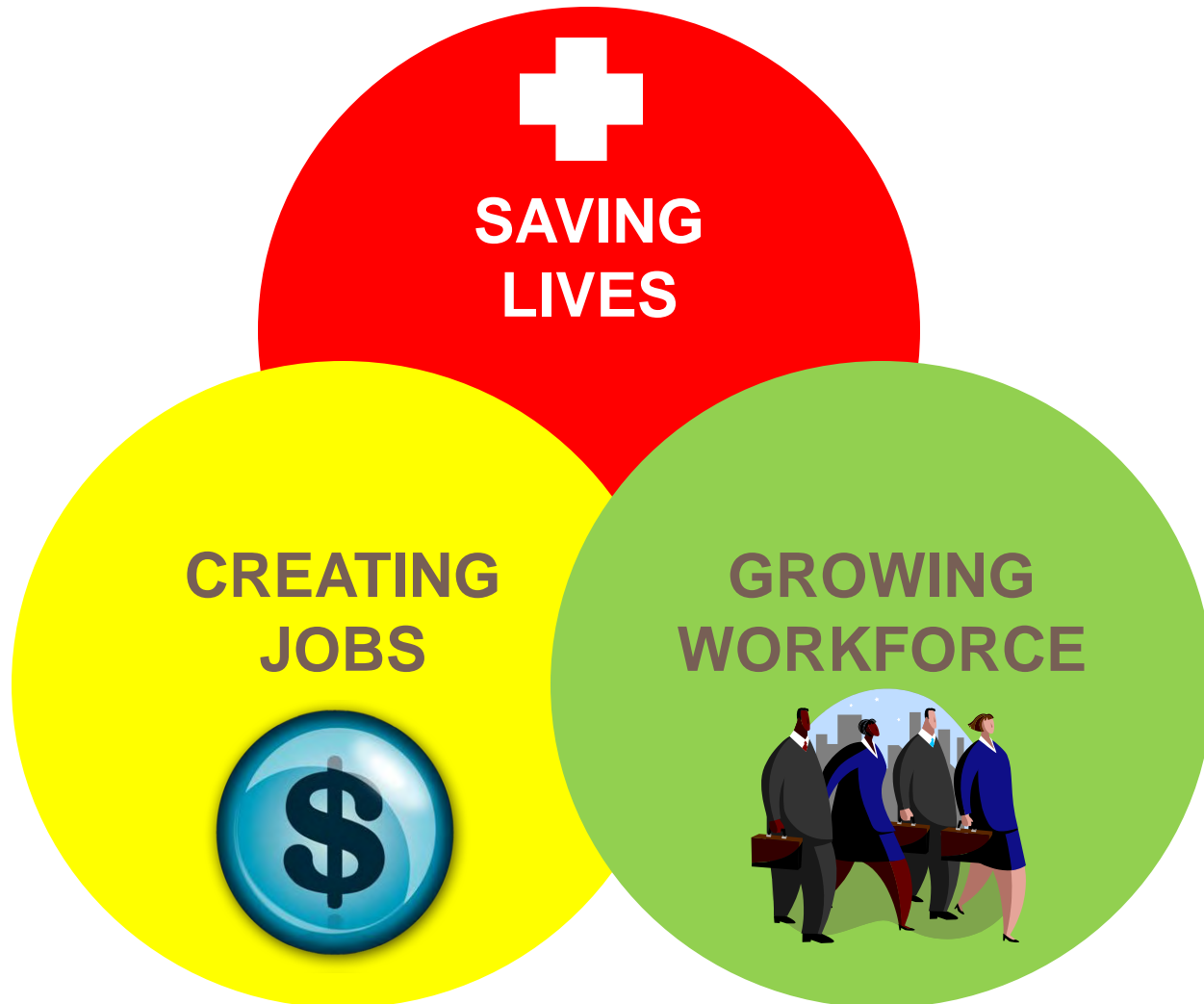
Conceptual Proposal for a Great Lakes Transportation Enterprise Institute



Great Lakes Transportation Enterprise Institute “A Networking Enterprise”



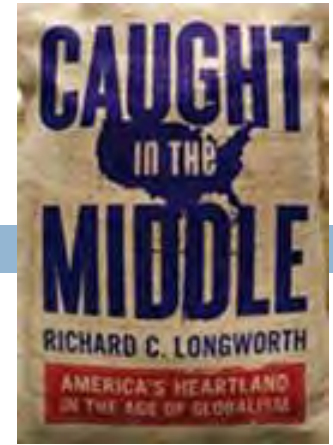
Great Lakes Transportation Enterprise Institute: The Urgent Need



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



The Emerging Megaregions

Cascadia

Northern California

Front Range

Southern California

Arizona Sun Corridor

Great Lakes

Northeast

Texas Triangle

Gulf Coast

Piedmont Atlantic

Metro Area Population

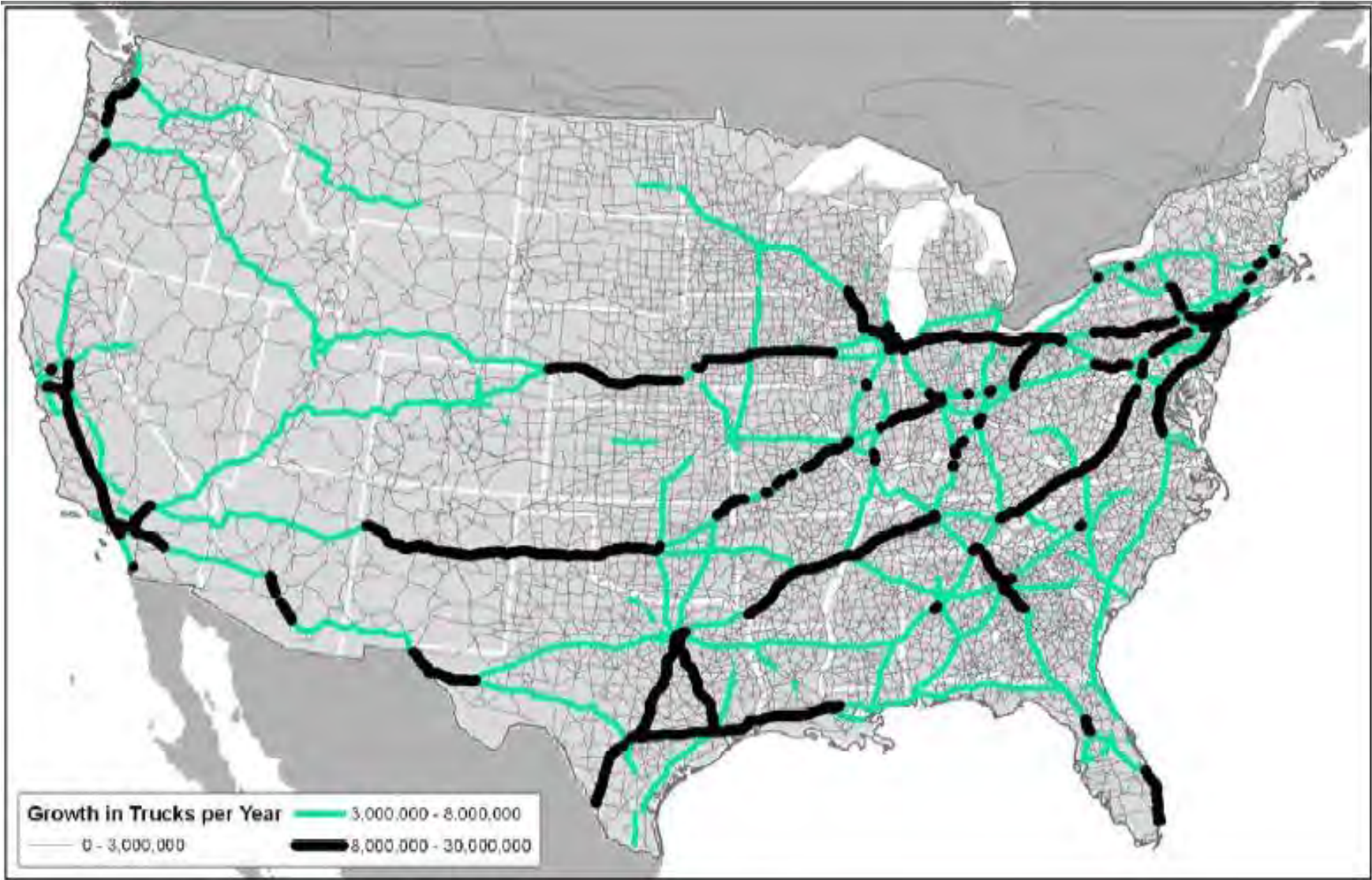


Florida

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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

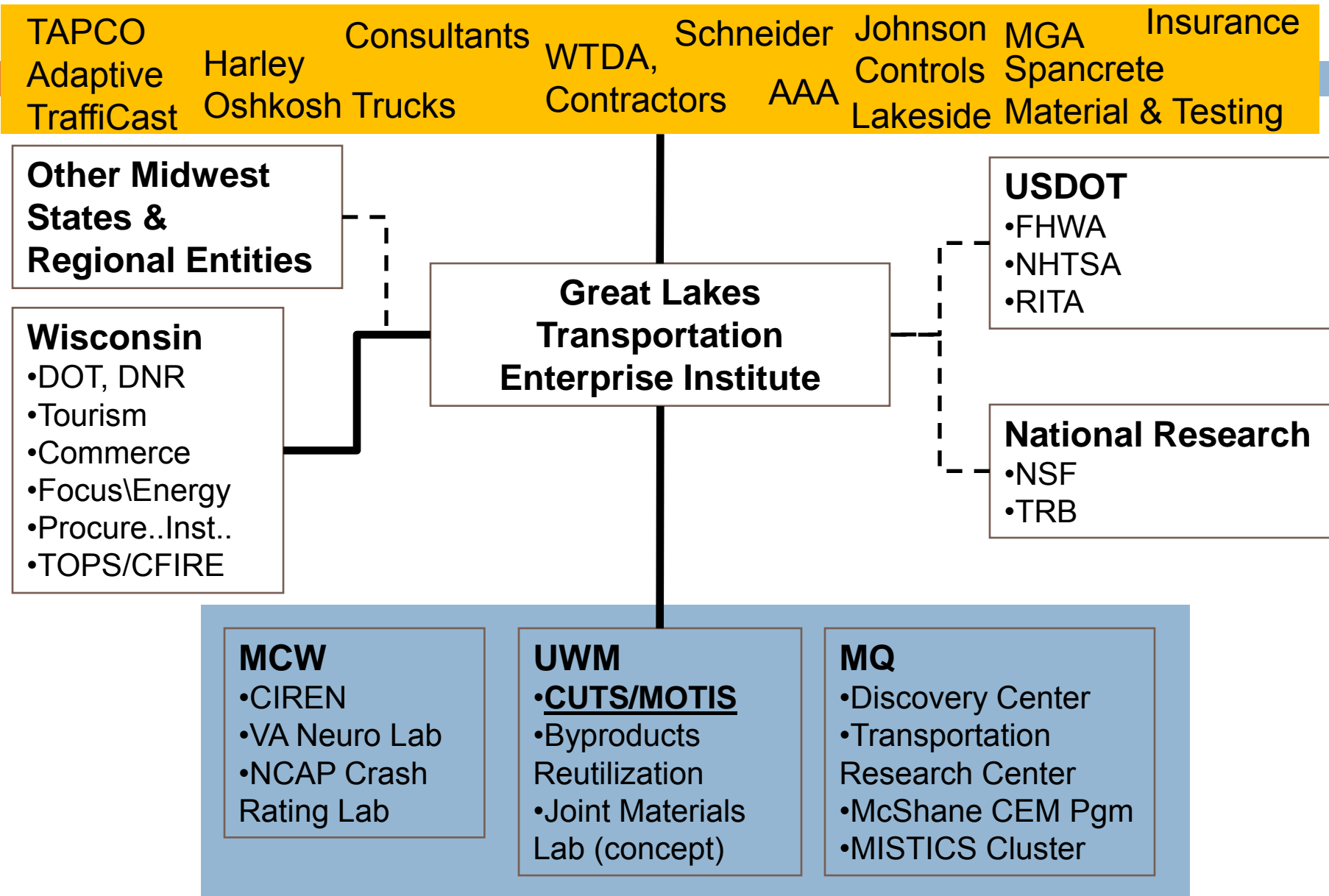
- Simulated environment labs
 - ▣ Driver and vehicle simulation
 - ▣ Environmental simulation, e.g. wind tunnels
 - ▣ Materials testing
- Simulated operations
 - ▣ Highway, multimodal, intermodal traffic and logistics analysis
 - ▣ Infrastructure life-cycle modeling
- Transportation infrastructure & network management systems
 - ▣ Highway infrastructure & operations surveillance & data management
 - ▣ Emergency response and public safety systems & data management

Great Lakes Transportation Enterprise Institute: Formative Themes

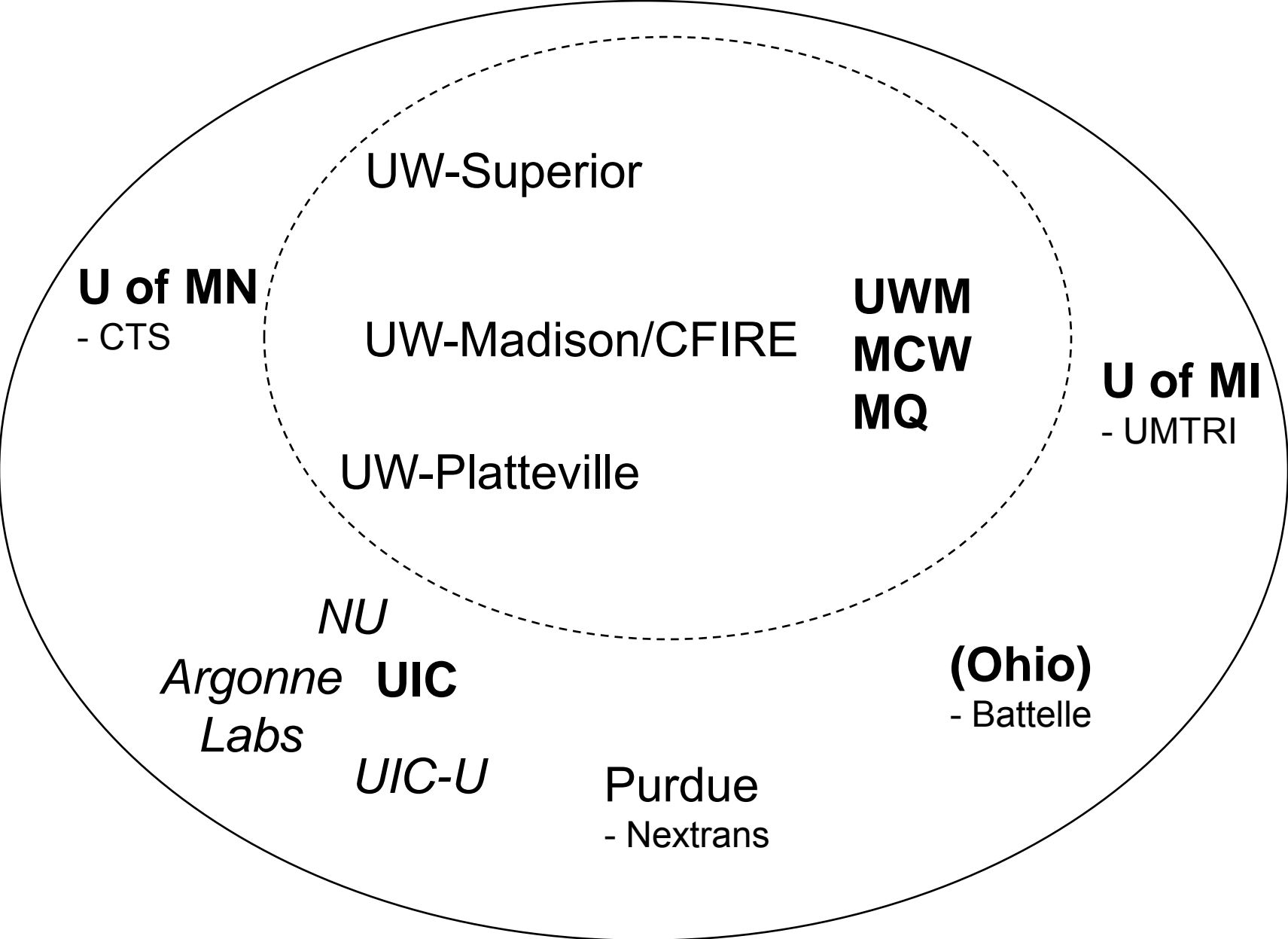
Megaregional Transportation Research & Development

- 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



Regional "Fit" of Great Lakes Transportation Enterprise Institute



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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