

Intermodal Transportation
Institute (ITI)
Transportation 101

May 17, 2005

Northwest Ohio – Meeting of the Modes



Toledo a Logistics Friendly City

- Toledo, Ohio listed as one of America's Five-Star Logistics Metro Areas in CLO/Chief Logistics Officer, October, 2003, 12-26.
- Toledo, Ohio ranked **5th** in the U.S. in the Logistics Quotient prepared for Expansion Management & Logistics Today Magazines by Penton Media, Inc in 2003
- Air Cargo World Survey on Air Cargo Excellence ranked Toledo Express Airport **1st** in the nation, March, 2005

Genesis of the ITI

- ITI a Community Driven Initiative
 - 1990s: *Public and private sector* organizations encouraged the University of Toledo (UT) to develop a center focusing on transportation, logistics, and supply chain issues
 - Spring 2001: *Industry funded study* identifies the importance of transportation & need for ITI
 - Summer 2001: Government, *industry* & university leaders identify regional strengths & opportunities
 - July 2001: President Johnson arrives on campus and quickly sees the strategic location and infrastructure
 - Oct. 2001: President Johnson announces the creation of the Intermodal Transportation Institute (ITI)
 - Jan. 2002: ITI begins operation

Working Together for a Common Purpose

- **Governments:** *City of Toledo, Lucas County, Wood County, Congressional Representatives, FHWA, ODOT*
- **Public Agencies:** *Port Authority, TMACOG, Regional Growth Partnership, TARTA, Toledo Express Airport, Port of Toledo, Regional Technology Alliance, EISC – Technology Center, Ohio Department of Development*
- **Industries:** *Roadway Express, Grand Aire, D&L Trucking, Bax Global, Dana Corporation, Hub Group, Transportation Advocacy Group for Northwest Ohio, Nagle Lines, N-Viro International Corp., Owens Corning, SSOE, Benchmark Engineering, Toledo Trucking Association, Ohio Trucking Association*

Vision Statement

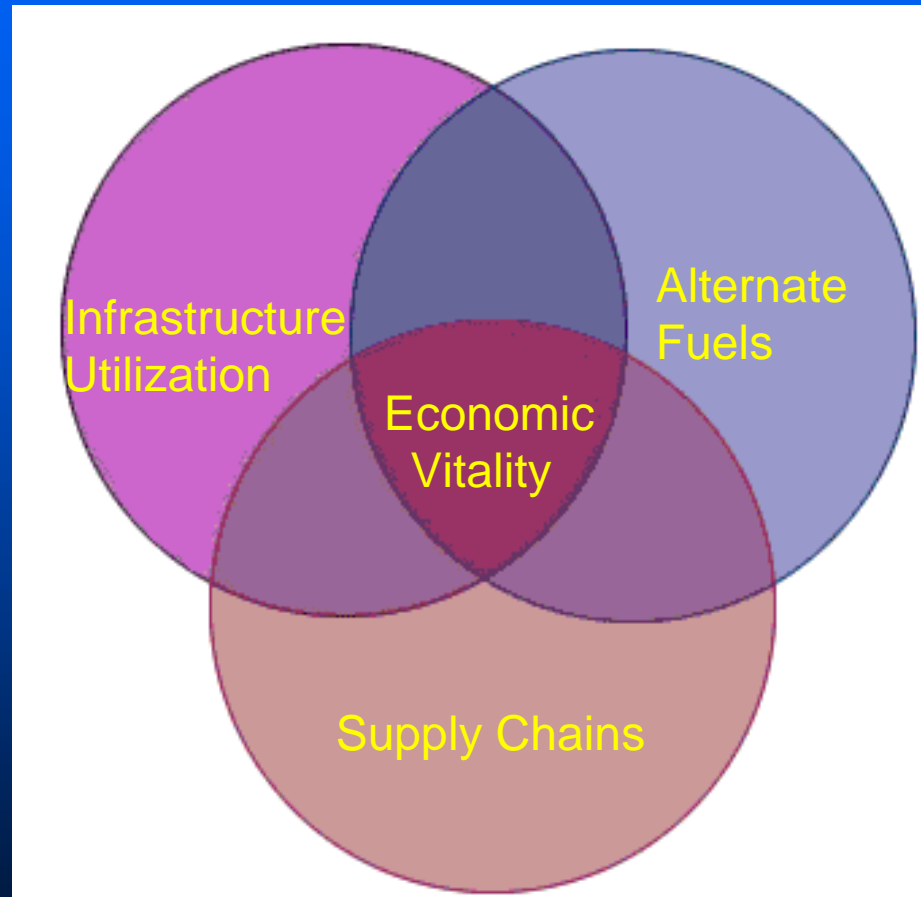
- To develop technology-enabled intermodal transportation systems and supply chains that promote *economic development* and *quality of life*.

Mission

- To provide **research, education and training, and planning and technical assistance** in developing and maintaining technology enabled, efficient, secure, and environmentally sound **transportation systems, supply chains, and logistic processes.**

The institute capitalizes on the region's strategic position as an intermodal transportation hub and international trading center with the objective of creating an economically strong and dynamic community.

Focus Areas: Alternate Fuels, Infrastructure Utilization, and Supply Chain Applications



- ◆ Decision-making and planning
- ◆ Life cycle costs
- ◆ Hazardous material
- ◆ Administrative impediments
- ◆ Safety and Security

- ◆ Technology: fuels & hybrid vehicles
- ◆ Revenue Impacts
- ◆ Fuel Distribution
- ◆ Logistics & Distribution
- ◆ Information systems
- ◆ Intermodal connectivity
- ◆ System-wide efficiency

Based on an interdisciplinary approach that links engineering, technology, business, and geography and planning

Active Projects

- Upper Midwest States Freight Study
- Midwest Regional Freight Planning and Research Institute
- Transportation Cluster Leadership
- Transportation Opportunity District
- Facility Management Information System
- Information Management for the Maumee River Crossing System

Active Projects

- BIO-Diesel Fuel Study
- Hybrid Vehicle
- Related Research in Alternate Fuel such as
Production of Hydrogen from Clean & Renewable
Sources for Fuel Cell Vehicles

Active Projects

- Global Network of Universities through ICHCA
- Center for International Business Education and Research
- U.S. DOT University Transportation Center
- Supply Chain Management for Department of Defense

- Metropolitan Utility Link for Transportation to Industry
- Short Sea Shipping
- KACI Intermodal System

Airport-Anchored Transportation Opportunity District



Water-Anchored Transportation Opportunity District



Short Sea Shipping: Opportunities on the Great Lakes

- Moving freight to Canada in less time and at lower costs
- Alternative to truck movements along the I-80, I-90, and I-94 corridors



Short Sea Shipping: Opportunities on the Great Lakes

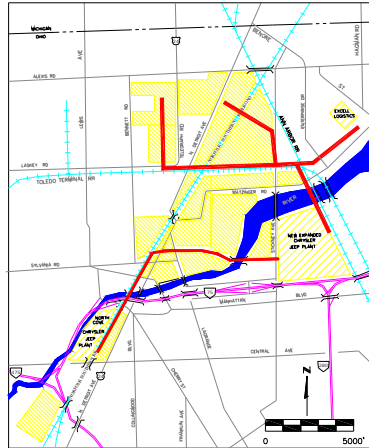
The KACI System

An operational concept that can provide a very quick, inexpensive, and uniquely simple exchange of highway vehicles onto and off trains.

This breakthrough in time, equipment, and labor savings changes the limit that prevents intermodal trains from being cost-effective in short and medium haul markets.

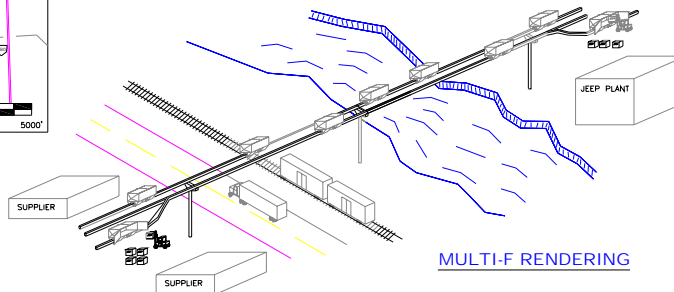


N. TOLEDO ASSEMBLY COMPLEX

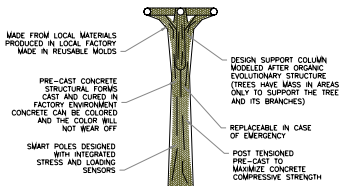


MULTI-F ADVANTAGES

- ADVANCED TECHNOLOGY IMPLEMENTATION
- MAKE IT COST EFFECTIVE FOR MANUFACTURES TO LOCATE IN METRO TOLEDO
- MAKE TOLEDO AREA A CENTER FOR MULTIPLE ASSEMBLY PLANTS AND THE SUPPLY CHAIN CORE
- REUSE LAND LOCKED BROWNFIELDS (APPROX. 3,000 ACRES IN TOLEDO)
- INCREASE CITY OF TOLEDO AND METRO AREA'S TAX BASE. (COST SAVINGS NOT TAX ABATEMENT IS WHAT BUSINESS NEEDS)
- REDUCE ENVIRONMENTAL POLLUTION (AIR, STORM WATER, & NOISE POLLUTION)
- REDUCE TRANSPORTATION BOTTLENECKS (SHORT HAUL TRAINS AND TRUCKS)
- CREATE NEW MANUFACTURING PRE-CAST STRUCTURES INDUSTRY WITH A PRODUCT TO EXPORT TO OTHER CITIES AND COUNTRIES
- CREATE ECONOMIC DEVELOPMENT CONDUIT FOR ENTIRE TOLEDO METRO AREA



MULTI-F RENDERING



MADE FROM LOCAL MATERIALS PRODUCED IN LOCAL FACTORY MADE IN REUSABLE MOLDS

PRE-CAST CONCRETE STRUCTURAL FORMS CAST AND CURED IN FACTORY ENVIRONMENT CONCRETE CAN BE COLORED AND THE COLOR WILL NOT WEAR OFF

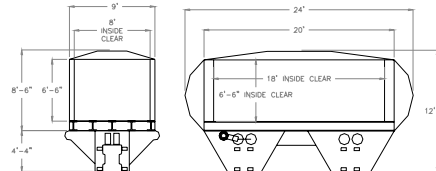
SMART POLES DESIGNED WITH INTEGRATED STRESS AND LOADING SENSORS

DESIGN SUPPORT COLUMN MODELLED AFTER ORGANIC EVOLUTIONARY STRUCTURE (TREES HAVE MASS IN AREAS ONLY TO SUPPORT THE TREE AND ITS BRANCHES)

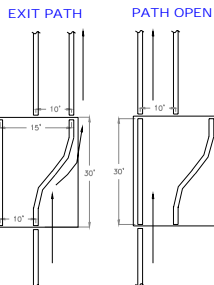
REPLACEABLE IN CASE OF EMERGENCY

POST TENSIONED PRE-CAST TO MAINTAIN CONCRETE COMPRESSIVE STRENGTH

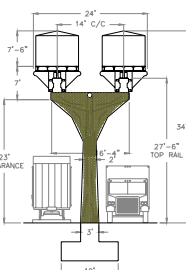
ARCHITECTURAL AESTHETICS



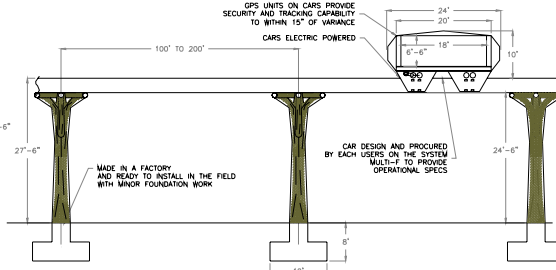
CARGO CAR



SWITCH TO SIDE TRACK



MULTI-F SECTION



MULTI-F SPAN

Private Sector Research & Innovation



Dana Automotive Systems
Technology Center, Maumee, Ohio

- Engineering development – automotive component (axles, driveshafts)
- Builds & tests prototypes before going to production
- Employs 300

Dana test track, Ottawa Lake, Michigan

- 1.75 miles – commercial vehicle testing



Trumbull™

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to attend a paving mat installation
with TruPave® Engineered Paving Mat from Owens Corning***

Imagine a non-woven fiberglass/polyester hybrid interlayer that will provide a superior moisture barrier and delay reflective cracking!

Imagine a non-woven fiberglass/polyester hybrid interlayer that is designed to withstand higher hot mix temperatures (up to 495 degrees F), providing a continuous, non-deforming water-resistant barrier!

This mat will not melt or shrink when it comes in contact with high-temperature asphalt mixes and is millable, recyclable and made with recycled glass too!



Owens Corning

- Composite materials research and manufacturing (for use in automotive manufacture)

Other major science and technology-based Industries include:

- Owens Illinois
- Pilkington North America

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