Managing Interaction Between Local Authorities and Major Traffic Generators

Presented by: Michael Marti
SRF Consulting Group, Inc.

Sponsored by: Local Road Research Board
August 19, 2011
LRRB Funding

- Legislatively funded (1959)
- Up to 1/2% of State Aid allocation can be directed to local road research
- Research is:
  - Managed by the LRRB
  - Conducted by DOT, U of M, MnSCU, Consultants, etc.
  - Administered by Mn/DOT Research Services
LRRB Funding Supports:

- Research to improve local road:
  - Design
  - Construction
  - Maintenance
  - Environmental Compatibility
- Programs for implementing and monitoring research results (RIC)
LRRB Structure

LRRB Members
Rick West, Otter Tail County (Chair)
Mitch Anderson, Stearns County
Deb Bloom, City of Roseville
Bruce Hasbargen, Lk of Woods Cty
Steve Koehler, City of New Ulm
Laurie McGinnis, U of M - CTS
Sue Miller, Freeborn County
Tom Ravn, Mn/DOT OCIC
Julie Skallman, Mn/DOT State Aid
Linda Taylor, Mn/DOT Research Services

RIC Members
Rich Sanders, Polk County (Chair)
Farideh Amiri, Mn/DOT Research Services
Tom Colbert, City of Eagan
Jim Grothaus, U of M – CTS
Jeff Hulsether, City of Brainerd
Maureen Jensen, Mn/DOT Research
Rick Kjonaas, Mn/DOT State Aid
Walt Leu, Mn/DOT State Aid, D1
Sue Miller, Freeborn County
Mitch Rasmussen, Scott County
Tim Stahl, Jackson County
Ben Worel, Mn/DOT Research Services
LRRB Process

Research
Mn/DOT
MnROAD
U of M
MnSCU
Consultants
Outstate Universities

Communication
RIC

Training
LTAP

Minnesota Cities & Counties
D6/D7/D8 Wind Farm Group

- Tim Stahl – Jackson County, Project Manager
- Gary Danielson – Kandiyohi County, TAC Chair
- Lee Amundson – Lincoln County
- Annette Bair – Southwest Regional Development Commission
- Marc Fischer – Mn/DOT
- Ron Gregg – Cottonwood County
- Mike Hanson – Mower County
- Guy Kohlnhofer – Dodge County
- Steve Schnieder – Nobles County
- Mike Marti – SRF Consulting Group, Inc.
- Dick Kronick – Technical Writer
- Dr. Jim Wilde – Mankato State University
Project Objective

- **Phase 1:** Develop a set of guidelines for local agencies to use in dealing with the construction of large traffic generators.

- **Phase 2:** Develop a way to calculate the consumption of roadway life by these large traffic generators.
Wind Power

- Fastest-growing source of electrical energy; increased by one-third between 2008-2009.
- In part, growth is driven by tax credits and increasing renewable energy requirements.
- MN statute requires power companies to produce 25% of their energy from renewable sources by 2025.
MN Wind Resource

Includes known sites that appear in the data as of December 2010. Excludes part of the U.S. National Agricultural Research and Education Service (USDA-NARE) database.

Permitted by PUC by the Minnesota Department of Commerce.
Wind Power (continued)

- Advantage:
  - Energy produced without fuel or emissions.
  - Provide jobs during construction
  - Tax revenue

- Disadvantage
  - Damage to rural roads during construction
Blade

LEGAL WEIGHT
Nacelle (generator, gearbox, drive train, brake assembly)

218,000 lbs
RT CRANE

RT Grove 890E-90 GVW 115,976 lbs
Construction Crane

Manitowoc 2250 Crawler
Weight 269,000 lbs (1094 lb/sf)

Manitowoc 18000 Crawler
Weight 1,513,720 lbs (2698 lb/sf)
Crane Crossing
Construction Route Map
LRRB Online Tool

- Leveraging the experience of MN County Engineers
- Developed an online tool that presents step-by-step guidelines on how to interact with developers of “wind farms” to preserve the roadway surfaces.
Navigable PDF contains a wide range on information contained in a single, downloadable interactive document. The document allows easy access to the following content:

- Web links and reports
- Sample ordinances, permits, and agreements
- Traffic calculator to quantify the impact on roads
- Policy options to recapture roadway costs
- Experience from current/past projects
- Research information
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<th>B</th>
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**Pavement Impacts of Large Traffic Generators**

Version 0.5 (preliminary) 6 August 2010

Not Yet Released
## Traffic Generator “Calculator”

### Agency Information

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<thead>
<tr>
<th>Segment Number</th>
<th>Existing Road Segment</th>
<th>Pavement Type (P-paved, G-graded)</th>
<th>Subgrade R Value</th>
<th>Cumulative ESALs Since Last Reconstruction</th>
<th>Design ESALs from Previous Design</th>
<th>Projected ESALs Without Development</th>
<th>Existing Pavement GE</th>
<th>Effective GE, % of Original GE</th>
<th>Appropriate Design Method 1, 2, or 3</th>
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### Cost Summary, by Method

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<th>Percent of Life Consumed</th>
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### Total Cost

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The deliverables are available at: lrrb.org, “click” on Traffic Generator Calculator located within left menu tab

Questions?