Proactive By Design.
Our Company Commitment

Mining Operations, Public Roadways, and Overview of Potential Impacts

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OVERVIEW

- Background
- Issue - Truck Impacts to Roads
- Impacts on Infrastructure
- State-Specific Impacts and Damage Mitigation Strategies

BACKGROUND

- Speaker Background
- Mining - Core Industry for ~30 years
  - Client and Industry Advocacy
  - Industry Association Support – (not just name on list)
    - IMA-NA, NISA, NSSGA, WISA, MAA, IAAP
    - Committees, Subcommittees, Task Forces – Chair and Support
    - Papers, Presentations, Training
  - Proactive
  - One Company

BACKGROUND

- Industry Advocacy
  - Annual DC Capitol Hill Visits
  - State Senate Testimony
  - IPCB and WI Testimony
  - Rule Making - MNSSRAP
  - Regulatory Agency Interaction
  - Draft Rule Making Review

BACKGROUND

- Industry Advocacy
  - Industry Group Presentations and Webinars
  - Stakeholder Presentations
    - National Transportation Safety Board (NTSB)
    - Society for Mining, Metallurgy & Exploration (SME)
    - American Planners Association
    - County Engineers, County Zoning Officials

Illinois Association of County Officials

APA American Planning Association

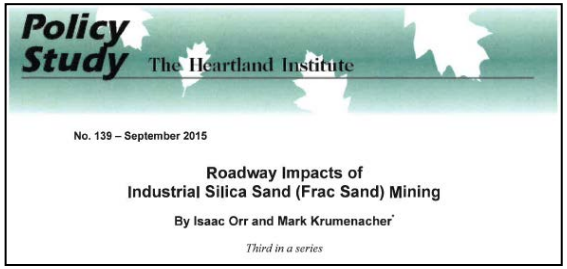
NTSB An Independent United States Federal Government Agency

IACE Illinois Association of County Engineers

SME Society for Mining, Metallurgy & Exploration

BACKGROUND

- Industry Advocacy
  - White Papers – NSSGA, MAA, IAAP, WISA, Progressive Rail, IMA-NA
  - Policy Papers



ISSUE

Truck Impacts to Roads

- Real or Imagined?
- New or Old?
- Statewide, Regional or Local?

ISSUE - Truck Impacts to Roads

- Real, Imagined, New or Old Issue?
  - Wisconsin Has ~2,500 NMM Mines
  - Illinois, Michigan and Minnesota – Likely Similar Numbers
  - Iowa Reports 1,100

  - The Recent Increase in Industrial Sand Mines Did Not Change These Numbers

ISSUE - Truck Impacts to Roads

- What Has Changed?
  - Public Awareness
  - New Industrial Sand Mines - Faster Rate Than Other NMM
  - New Industrial Sand Mines - in New Areas
  - Isolated Impacts to Local Roads
  - Social Media

ISSUE - Truck Impacts to Roads

- Not All Mines Use Roads to Same Extent
  - Some Are Located on Class A Highways
    - County, State and US
  - Trucking From Mine to Processing
    - Some Do, Some Do Not

Impacts on Infrastructure

- Roads Deteriorate Over Time Due To:
  - Traffic Load
  - Environmental Factors

Impacts on Infrastructure
Traffic Load

- Vehicle Weight
- Average Daily Traffic (ADT)
- Distribution of Vehicle Weight Over the Axles

Impacts on Infrastructure
Traffic Load

- Vehicle Weight
  - Exponential Relationship Between Weight and Potential Impact
    - Average Passenger Vehicle ~1.5 to 2 Tons
    - Tractor-Trailer ~40 Tons
    - Loaded Tractor-Trailer
      - 20 to 25 Times Heavier than Passenger Vehicles
      - Impact May Be Equivalent to 5,000 Cars
      - On a Road Not Designed For Heavy Traffic

Impacts on Infrastructure
Traffic Load

Vehicle Weight

- Federal Law Requires All States to Allow GVW of 40 Tons
  - Interstate System and Other Designated Highways
  - Certain Distances Off These Highways En-route to Terminals
- Several States Allow Greater GVW When More Than Five Axles
  - Allowable Under "Grandfather Clauses" in Federal Law
    - Michigan – Maximum 11 Axles – 82 Tons
    - Minnesota – Maximum 8 Axles – 54 Tons
      - Maximums Based on Per Axle Limitations

Impacts on Infrastructure
Traffic Load

- Illinois, Iowa and Texas - Maximum 40 Tons -
- Wisconsin - Maximum 40 Tons
  - Applicable to All "Class 'A' Highways"
    - All State Trunk Highways and Connecting Highways, County Trunk Highways, Town Highways and City and Village Streets Not Designated as "Class 'B' Highways"
  - Class B Highways – Maximum 24 Tons
    - 60% of Class A Limits
- Most States Allow Higher Maximums With Permit

Impacts on Infrastructure
Traffic Load - National Trends

National Trends

- Toward Lower Axle Weights and Higher Gross Vehicle Weights.
- Proposed Changes to Federal Law For US Highways
  - Most Recently During the 2012 Federal Highway Bill
  - Most Common Proposal - GVW of 97,000 lbs. 48.5 Tons
  - Would Add One 17,000-lb. Axle to 53-Foot Trailer

Impacts on Infrastructure
Traffic Load – National Trends

- The Transportation Research Board (TRB) Published Research – the "Turner Proposal"
  - Heavier Gross Vehicle Weights on More Axles, With Each Axle Carrying Less Weight
    - Net Decrease of $326 Million in Annual Pavement and Bridge Costs Nationally
    - Shippers and Businesses Would Save an Estimated $2 Billion Annually

Impacts on Infrastructure
Traffic Load

- Common Truck Types Transporting Industrial Sand
  - Five-axle Tractor-Trailers GVW 40 Tons
  - Quad-Axle Dump Trucks GVW 36-37 Tons

Impacts on Infrastructure
Environmental Factors

Rainfall and Temperature.

- Rainfall
  - Penetrates the Structure of the Road, Alters the Properties of Different Layers
  - Pavement Becomes More Vulnerable to Traffic Loads
- Temperature
  - Generates Stresses Causing Materials to Expand and Contract
  - Frost Heave

State-Specific Impacts and Damage Mitigation Strategies

- Wisconsin
- Minnesota
- Iowa
- Illinois

State-Specific Impacts and Damage Mitigation Strategies

Wisconsin

- Local Jurisdictions Often Impose:
  - Hours of Operation
  - Truck Routes and Speeds
  - Road Repair Liabilities

State-Specific Impacts and Damage Mitigation Strategies

Wisconsin

- Wisconsin Statutes Provide Authority to Local Governments Protect Roadways
  - Statute 348.16 - Set Weight Restrictions on Class B Highways - Include County and Town Highways and Village and City Streets
  - Statute 348.17 - Impose Special or Seasonal Weight Limits
  - Statute 349.16 – Enter Road Upkeep and Maintenance Agreements [RUMA]

State-Specific Impacts and Damage Mitigation Strategies

Wisconsin

- Road Upkeep and Maintenance Agreements (RUMAs)
  - Negotiated
  - Upgrade or Maintain Roads to Accommodate Changed Use
  - Most Appropriate for Improving Road Class B to A
  - Chippewa County Examples in Policy Paper No. 3

State-Specific Impacts and Damage Mitigation Strategies

Wisconsin

- Inconsistencies in the Application of Authorities
- Need Fact-Based Engineering to Apply Statutes and Develop RUMAs
  - Traffic Impact Analysis (TIA)
  - WisDOT Facility Development Manual (FDM)

State-Specific Impacts and Damage Mitigation Strategies

Wisconsin

- Local Officials Cannot Regulate State Roads
- Maintenance and Improvement Costs by State
- WisDOT Northwest Region Reports
  - Overall Impact of Frac Sand Mining on State Highway System Will be Relatively Minor
    - Small Percentage of Highway Segments
    - Primarily Improvements at Public and Private Road Intersections - Most at Sand Industry Expense

State-Specific Impacts and Damage Mitigation Strategies

Minnesota

- 7 of 9 Sand Mines Located Within Existing NMM
- Established Transportation Infrastructure Along U.S. and State Highways

State-Specific Impacts and Damage Mitigation Strategies

Minnesota

- 2016 Minnesota Statutes - 298.75 Aggregate Material Removal Production Tax
- Tax on Removal of Aggregate
- Collected and Administered at the County Level.
- Any County May Impose if County Board Has:
  - Voted After a Public Hearing to Impose the Tax, and
  - Has Notified the Commissioner of Revenue
- 21.5 cents per cubic yard or 15 cents per ton

State-Specific Impacts and Damage Mitigation Strategies

Iowa

- One Industrial Sand Mine
- No Hope for Others Due to Geology and Restrictive Ordinances

State-Specific Impacts and Damage Mitigation Strategies

Illinois

- 6 of 7 Industrial Sand Mines Are in La Salle County
- One in Ogle County.
- 5 of 7 Mines - Decades to >100 Years
  - On U.S., State, or County Highways Designed Decades Ago to Accommodate Heavy Truck Traffic.
  - One New Mine On U.S. highway.
  - One New Mine On County Highway

State-Specific Impacts and Damage Mitigation Strategies

Concluding Remarks

- Industrial Sand Mining Has Not Lead to Widespread Damage to Public Roads.
- Industrial Sand Operators Have Paid to Repair, Upgrade, and Maintain Local and County Roads.

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Our Company Commitment

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