

# Municipal Roads for the Economy Program (MREP)

Terry Hoeving, Daniel Segal, Alexander Udey



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# Bridges:

- MREP Bridge Program Application
- MREP Bridge Program Application for Grant Payment
- Minimum Requirements to Qualify for the MREP Bridge Program
- Infrastructure Deficit
- Bridge Components and Terminology
- Bi-Annual Bridge Inspections
- Bridgerail Heights and Designs
- Hazard Delineator Alternative Installations
- SaskTenders
- New West Partnership Trade Agreement

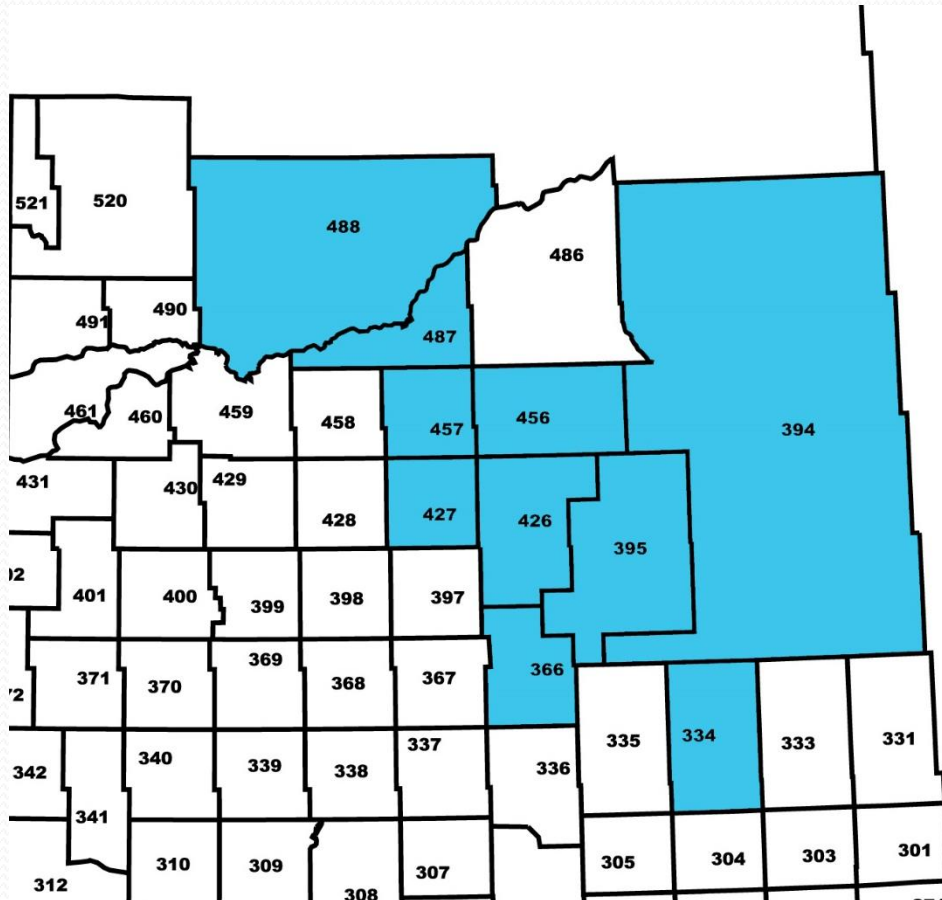


# Funding for this project:

- Western Economic Development
- Saskatchewan Centre of Excellence in Transportation and Infrastructure (SCETI)
- Industry (consultants and contractors)
- MITACS
- Unable to leverage SARM investment to obtain Natural Sciences and Engineering Research Council (NSERC) grants



# Northeast Quadrant Bridge Innovation Project (NEQ)



*Bridge infrastructure has become a major issue for the municipalities of Saskatchewan due to the majority of the bridges being built during a small time period.*



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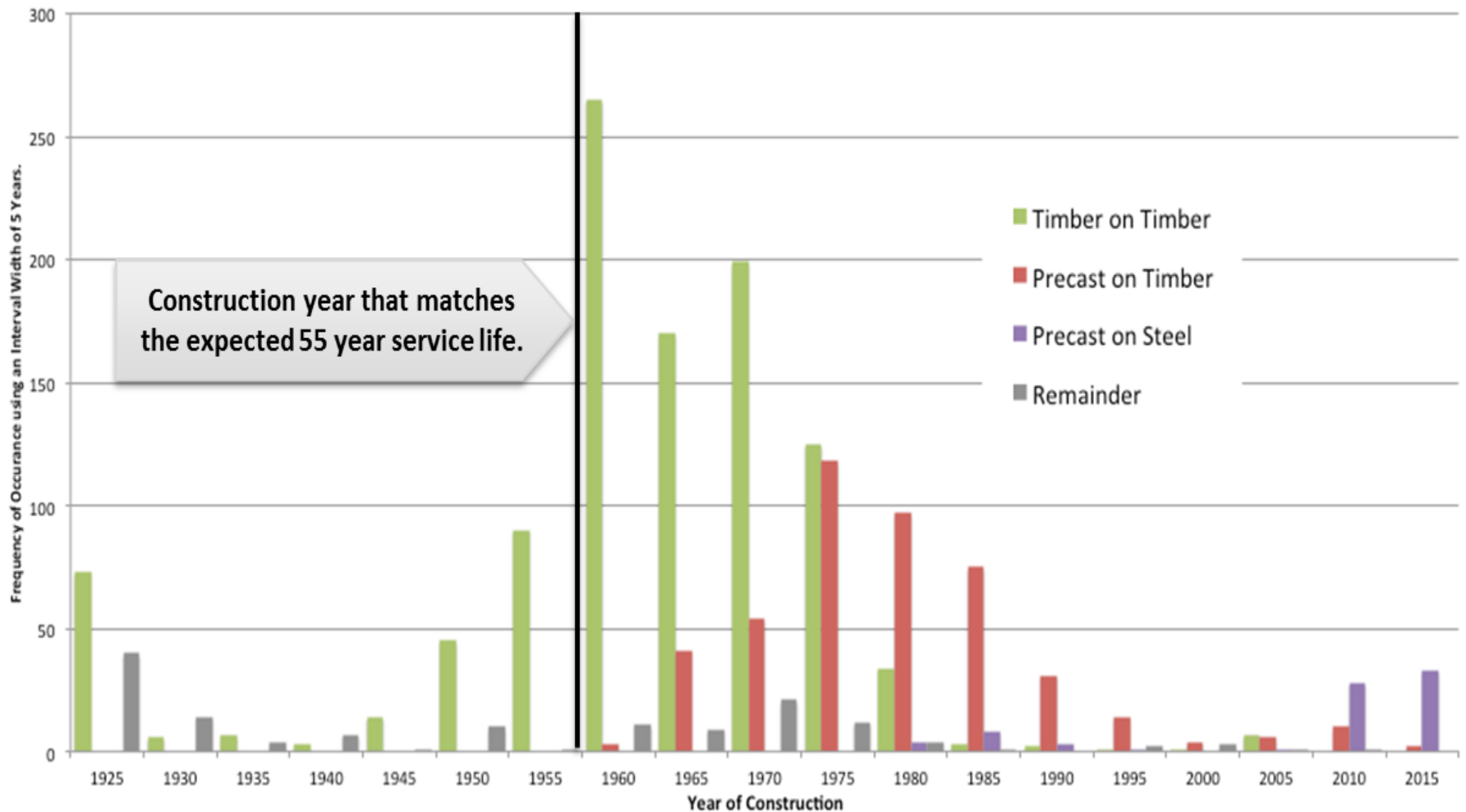
# Other Parties Involved

- The University of Saskatchewan
- Jim Zacaruk, P.Eng., Ph. D.



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## *Status Quo is not sustainable*



# Northeast Quadrant Bridge Innovation Project (NEQ)

- The major elements of this project can be broken down into four general areas:
  1. Municipal Traffic Loading Model
  2. Superstructures
  3. Substructures
  4. Asset Management





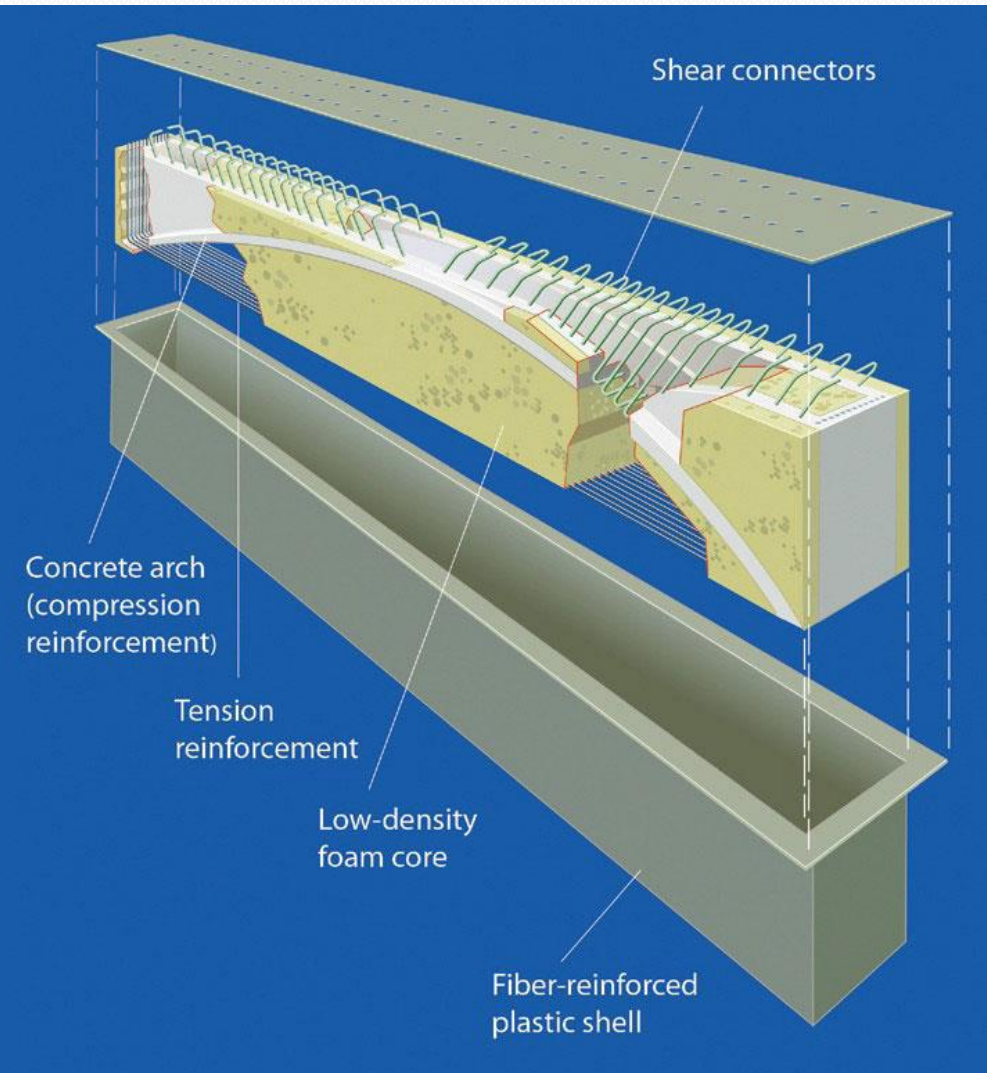
# NEQ

- **Municipal Traffic Loading Model**
  - The Canadian Highway Bridge Design Code CAN/CSA S6-06
  - Possibility that the code could be relaxed for municipal bridges
  - This element of NEQ was spearheaded by the founding RMs of the NEQ and is still being pursued at this time





# NEQ



- **Superstructures**

- Hybrid Composite Beams
- Temporary and Portable Bridges
- Prefabricated concrete and steel superstructures



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# NEQ

- **Substructures**
  - Geo-synthetic Reinforced Soil Integrated Bridge System (GRS-IBS)

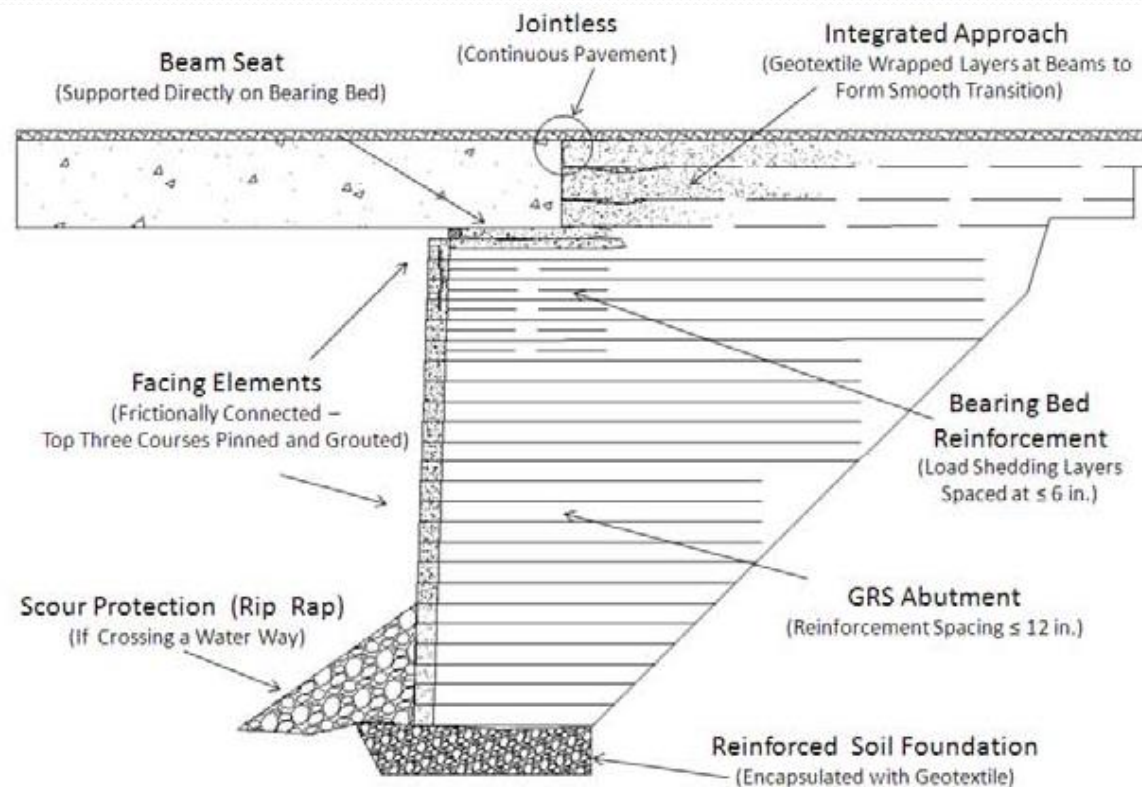


Figure 1. Illustration. Typical GRS-IBS cross section.



Figure 6. Photo. Cut-away of GRS mass.



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# NEQ

- **Asset Management**

- Inspection Cycle Optimization

- Inspection Cycle Frequency

- Inspection Frequency based on Condition/Age

- Maintenance Methods Analysis

- Cost Benefit Analysis of Specific Standard Repairs

- Alternative Maintenance/Repair Methods

- Repair vs. Replace Decision Making Matrix

- Given traffic, road class, condition, and detour length can we get an automatic answer

- Bridge Condition Index

- SaskPower Pole Strength Charts

- Municipal Bridge Repair Manual

- Detailed manual of standard repairs and when to implement them to aid in management and inspection report interpretation

- Low Service Options

- Lower bridgerail

- Reduced bridge width

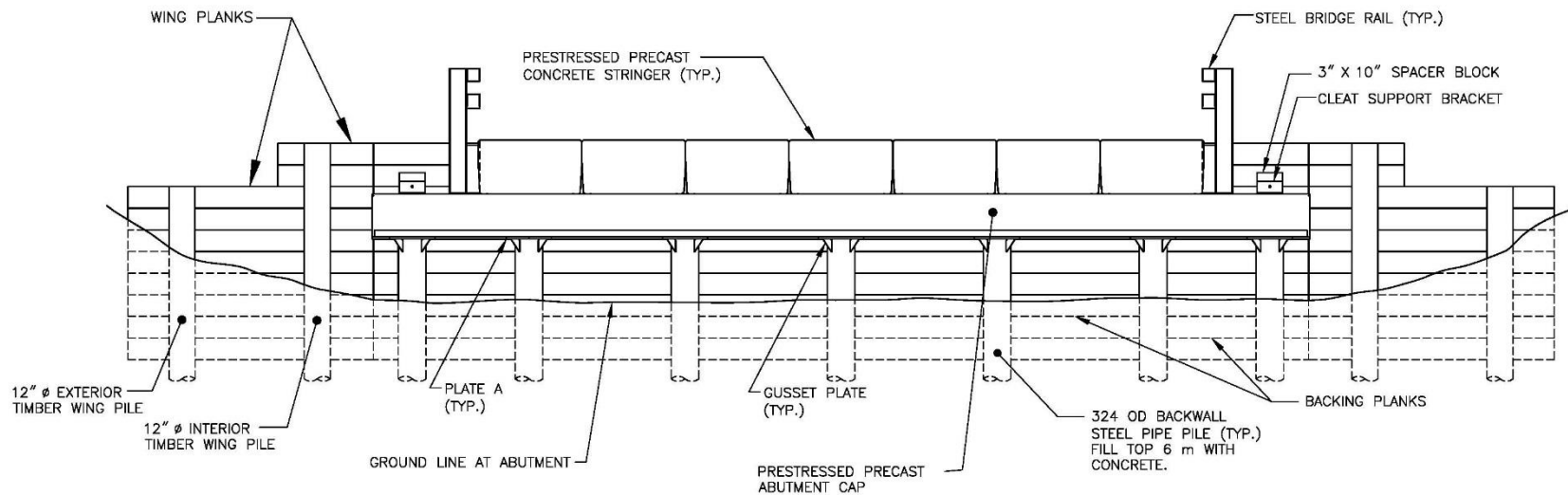


# New NEQ Focus

- **Communications and Education**

- How can we help RMs to better understand and maintain the infrastructure they have?
- Are there alternative bridge structures currently available that RMs can use outside or within MREP?
- Can we improve the repair and maintenance of treated timber?
- Everything we learn through NEQ needs to be distributed to RMs
- Knowledge is power





## STANDARD STEEL-CONCRETE ABUTMENT TERMINOLOGY

DRAWN BY

D.S.

Sheet 9 of 9

# • Bridge Asset Management through Inspection



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# NEQ

- Email this past Friday
  - NEQ Project: Regular Inspection of Bridge Infrastructure
- NCTPC Municipal Bridge Inspection Video  
[https://www.youtube.com/watch?v=K0WAj88z\\_VE](https://www.youtube.com/watch?v=K0WAj88z_VE)
- Search Youtube for “NCTPC” or “Municipal Bridge Inspection”
- Please sure to like our SARM Youtube channel so you can know of any future videos we post





# Northeast Quadrant Contacts

## Staff

Laurel Feltin  
[lfeltin@sarm.ca](mailto:lfeltin@sarm.ca)  
306-761-3733

Terry Hoeving  
[thoeving@sarm.ca](mailto:thoeving@sarm.ca)  
306-761-3736

Daniel Segal  
[dsegal@sarm.ca](mailto:dsegal@sarm.ca)  
306-761-3746

## Board

Doug Steele

Harvey Malanowich

## Municipal

Francis Chabot



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# Questions?



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