



# LANDOWNER CONSTRAINTS TO THE ADOPTION OF LIVING SNOW FENCES

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Monday, June 13, 2011

# Outline

- Research Project
- Living Snow Fences
- Focus Groups
  - Costs
  - Constraints
  - Other factors
- Payment Calculator
  - Landowners Costs
- Recommendations

# Research

*Research and Assess the Farmer and Mn/DOT Economic and Environmental Costs and Benefits of Living Snow Fences, Including Carbon Impacts*



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# Research Project Tasks

- Field survey of cost and constraints to landowners
- Financial analysis of costs to landowners
- Carbon emission and payment estimation
- Mn/DOT's costs savings
- LSF & Corn Row Payment Calculator

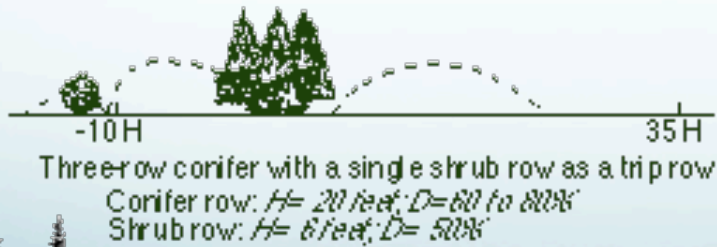
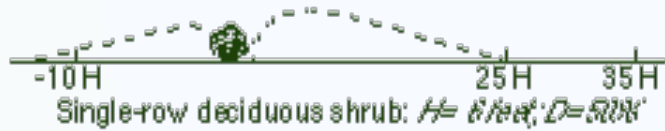
# Living Snow Fences (LSF)



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# Living Snow Fences



MnDOT

40-50 Feet Wide

Average 1 acre of land

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# Blowing Snow Problems



Blow-Ice

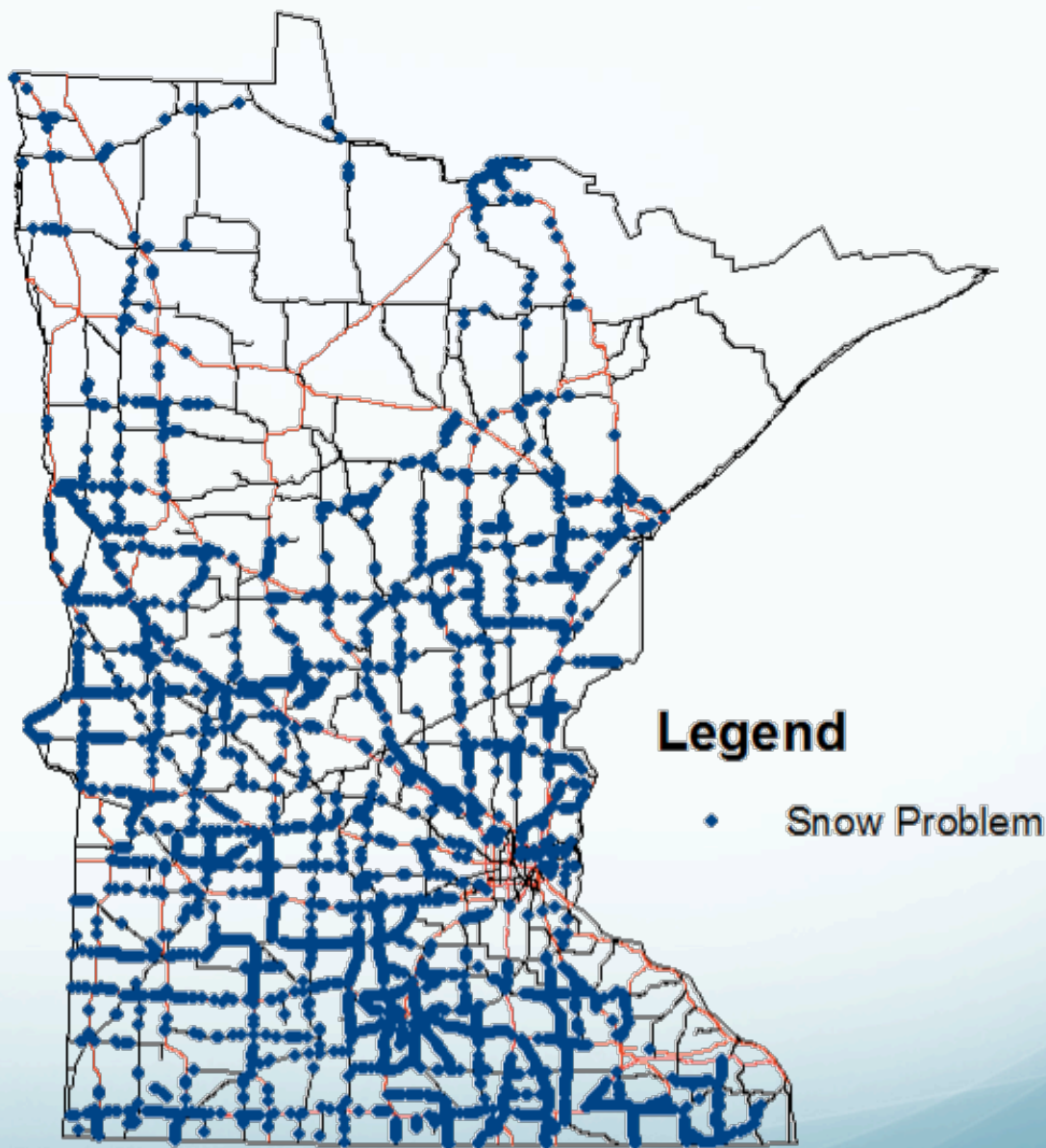
Drifting Snow



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## 3,700 Blowing Snow Problem Areas

- Field Survey Data





Without LSF



With LSF



# Focus Groups

Sierra Schroeder



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# Focus Groups

What are the costs and constraints of living snow fence adoption & implementation?

- Funnel sequence questioning route
- 5 Study Sites in Minnesota
- 45 Landowners in existing snow problem areas
- With and without living snow fences
- Costs
- Constraints
- Other adoption factors



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# Focus Groups: Costs

- Establishment
  - Conservation program cost share
  - Mn/DOT covers remainder
- Maintenance
  - Most frequently discussed cost
  - Rejuvenation
- Removal
  - Compensation to return to tillable land
- Opportunity Cost
  - Rising Land Values/Rent
- Current Compensation Insufficient

# Focus Groups: Constraints

- Risk
  - Die-off
  - Biggest constraint
- Hassle
  - Locating planting stock
  - Farming around LSF
- Time
  - Full schedules
- Contract
  - Length
  - Rigidity

# Focus Groups: Other Adoption Factors

- Awareness
  - Unaware before focus group
- Relative Advantage
  - Marginal cropland
- Program Perception
  - Conservation
  - Social responsibility

# Landowner Costs

Dinesh Paudel – Interviews, Mn/DOT Financial Documents  
David Smith – Economic Data and Modeling



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Policy & Program  
Tool

**ctre**

**Center for Transportation  
Research and Education**

2011 Mid-Continent Transportation  
Research Symposium  
Iowa State University, Ames, IA  
August 18-19, 2011

Economic Analysis



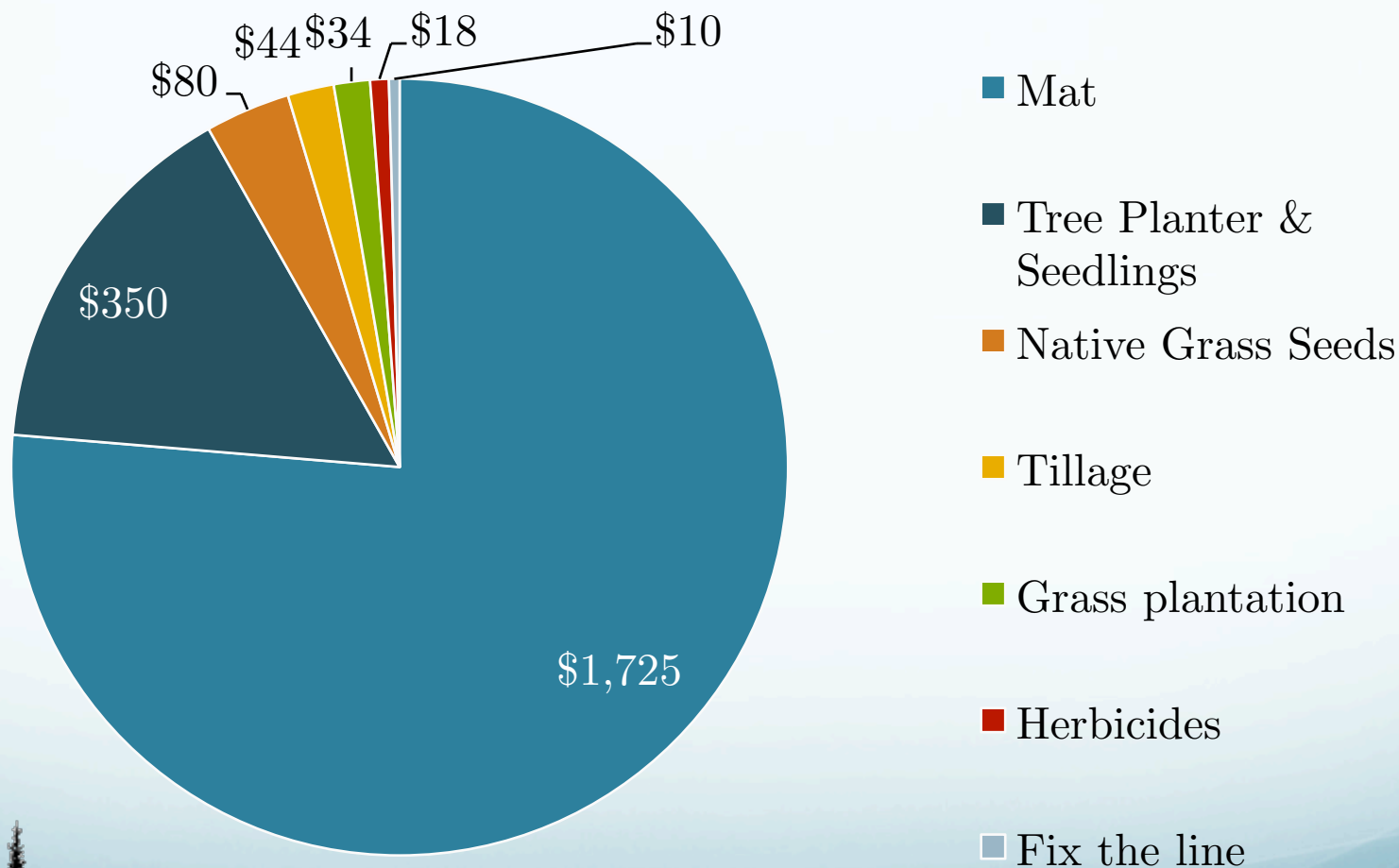
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# Establishment Costs per acre



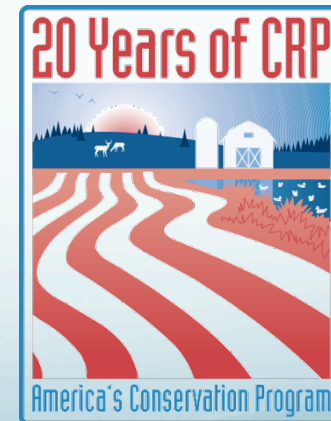
# Conservation Programs

## Environmental Quality Incentives Program (EQIP)

- Any Type of Land
- Establishment
  - Preparation
    - \$19/acre cropland & grassland
    - \$136/acre shrub/brush
    - \$1078/acre tree removal
  - \$66 per 100 feet per row

Land that has been cropped four out of six years

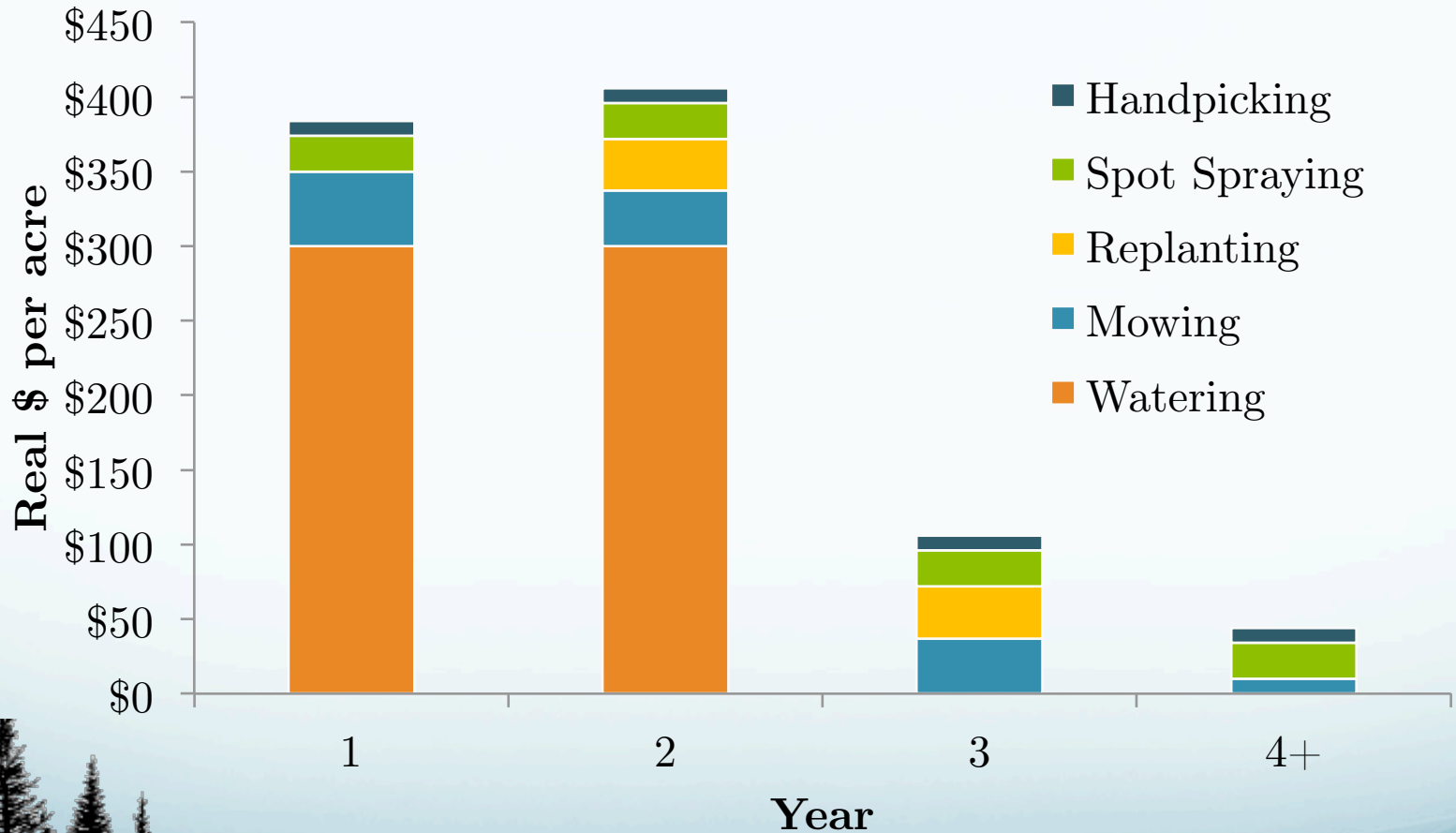
- 50% Establishment Cost Share
- Annual rental payment based on soil type
- \$10/acre signing bonus



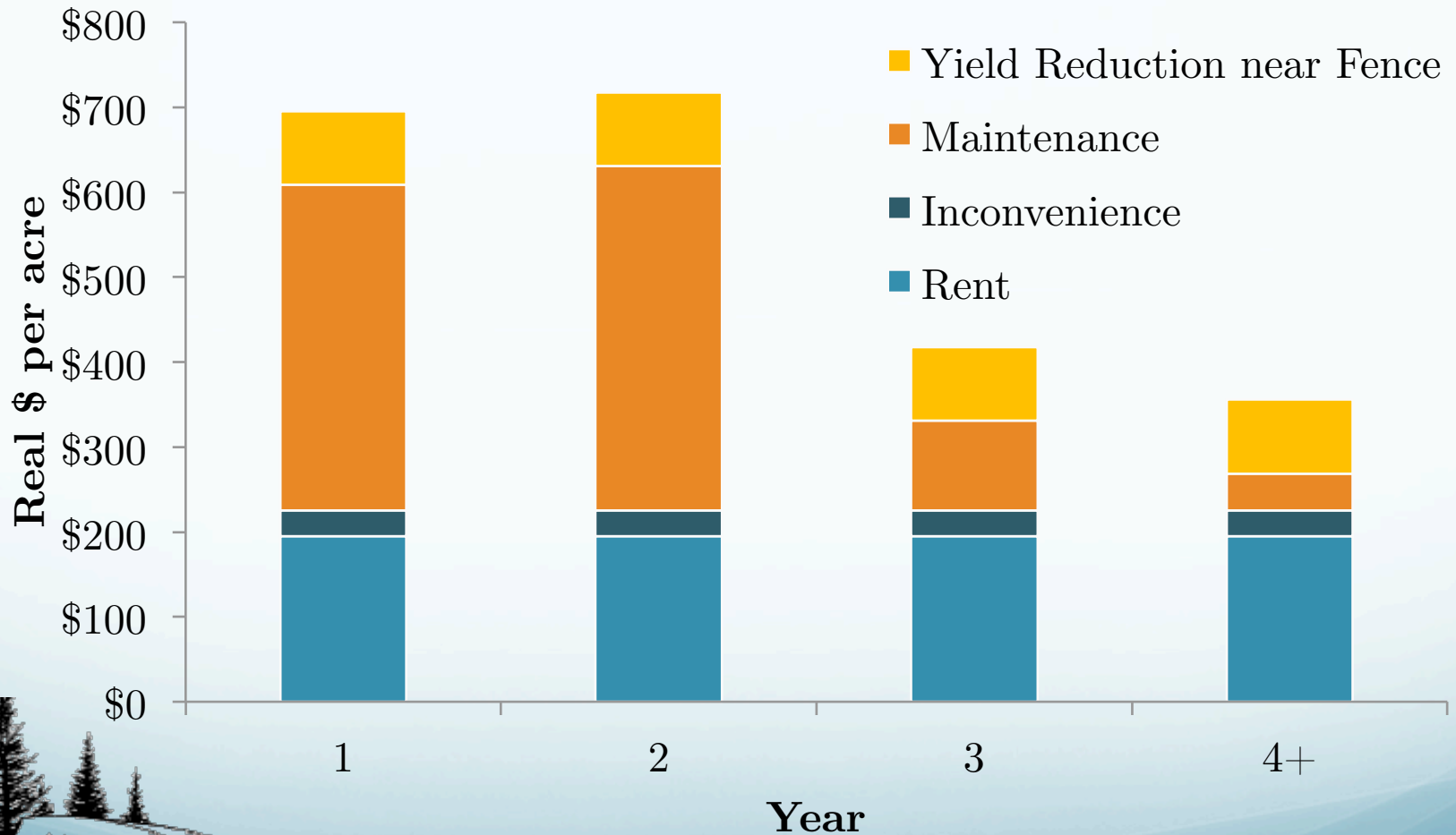
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# Maintenance Costs of Living Snow Fences

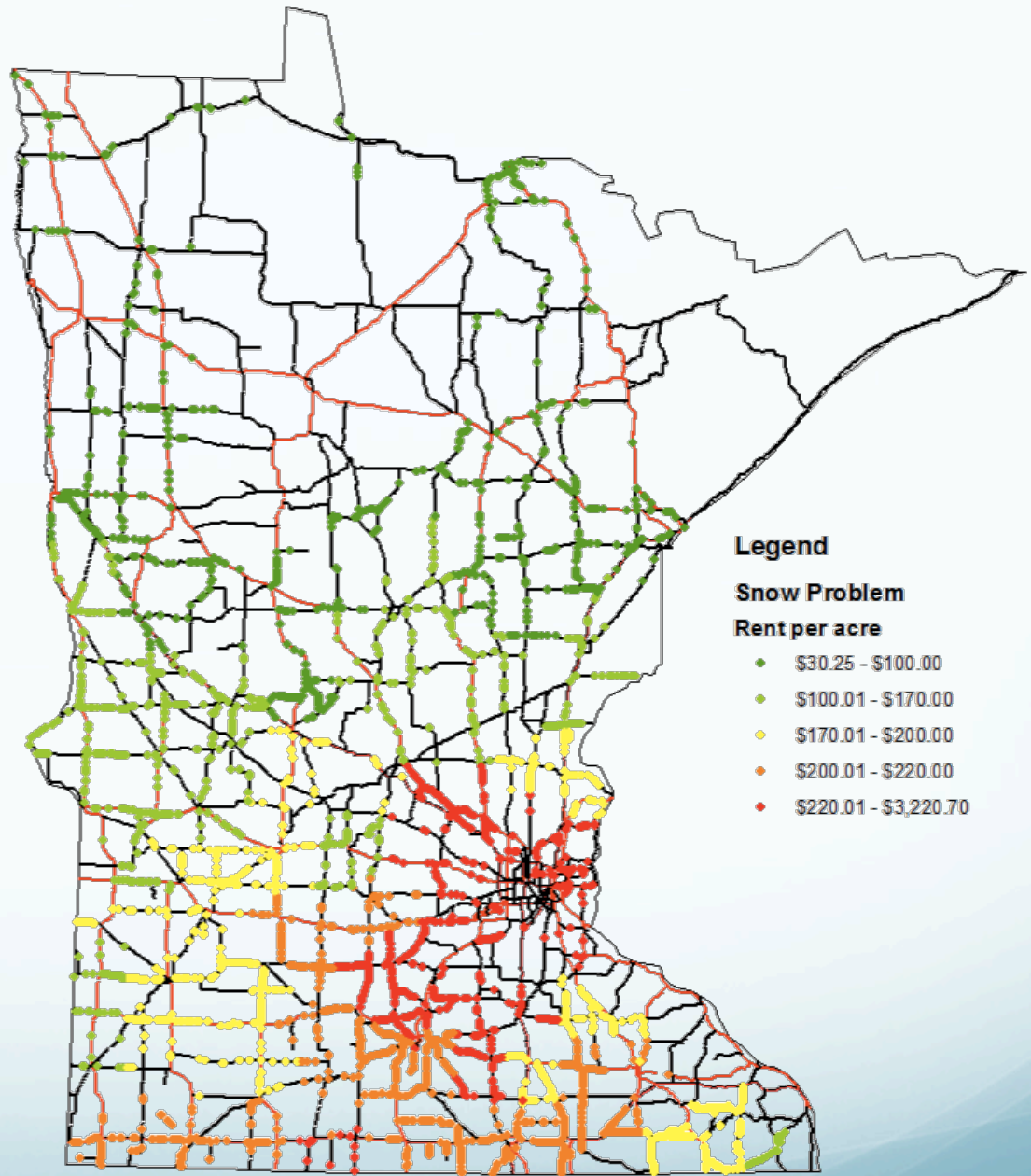


# Landowner Costs



# Rental Rate

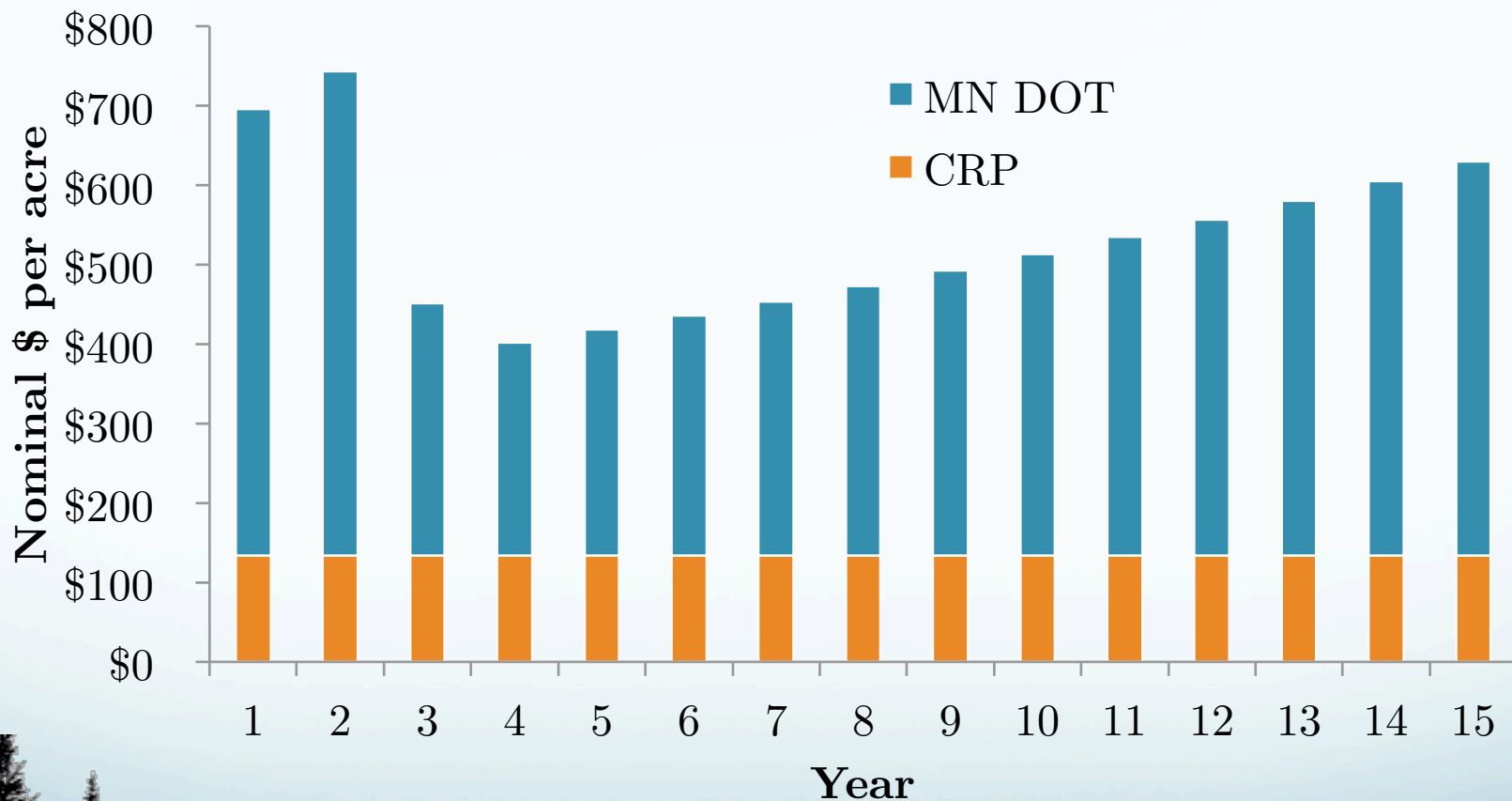
Source: MN Land Economics



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# Minimum Payments to Landowner



# Recommendations

- Shorter more flexible contracts (15 y CRP)
- Increase compensation at locations with positive net benefits (67% of snow problem areas in Minnesota)
- Payment adjusted for inflation
  - Tie payment to index (land value, corn price)
- Increase payment in years 1-3 for maintenance
- Reduce risk & liability to landowner
  - Compensate for replanting
- Contract maintenance services
- Increase awareness
- Targeted recruitment from local contact

# Thank You!

## MnDot Advisors

- Dan Gullickson

## Research Advisor

- Dean Current

## Technical Advisory Panel

## Regional Extension Advisors

- Gary Wyatt
- Diomy Zamora



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# Questions?

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