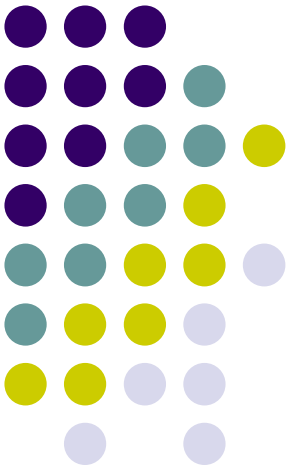
Opportunity for Class II & III Railroads in Ethanol and Its Co-product Transportation

A Survey Study in Minnesota

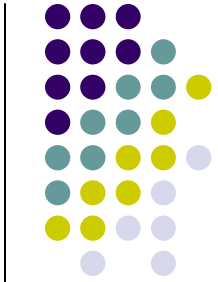
March 16-19th, 2008, Transportation Research Forum



MINNESOTA DEPARTMENT OF AGRICULTURE

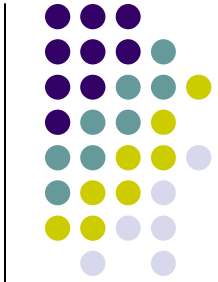
FROM THE FARM TO YOUR FAMILY

Outline



- The growth of ethanol industry in the U.S.
- The importance of rail transportation
- The goal of the survey study
- The development of ethanol industry in MN
- Survey findings
- Opportunities for Class II&III railroads
- What we can do

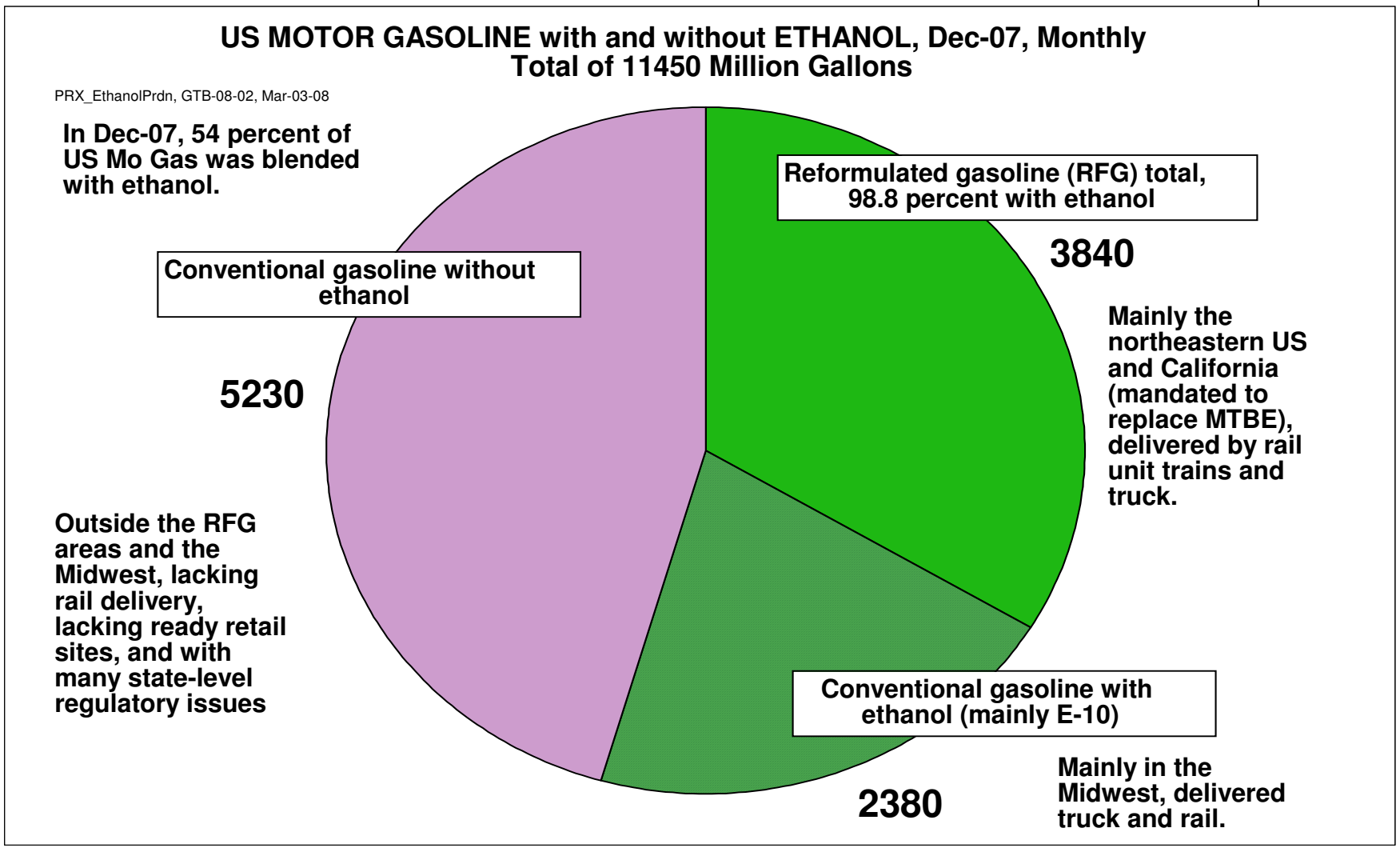
A Growing Ethanol Industry in the U.S.



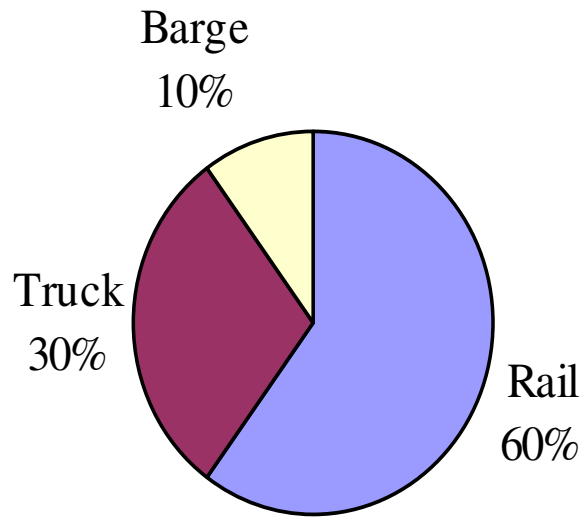
- Growing annual production:
  - 6.5 billion gallons in 2007;
  - 0.175 billion gallons in 1980.
- Annual growth rate was 15%, 1980-2007
- The new energy bill requires:
  - By 2015, 15 billion gallons from corn
  - By 2022, 36 billion gallons renewable fuel

Source: Renewable Fuels Association

54% Motor Gas With Ethanol

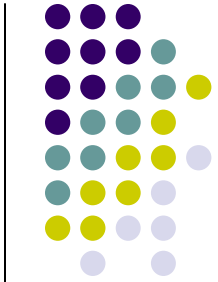


Primary Transportation Mode



Source:Ethanol Transportation Backgrounder, 2007, USDA

Question

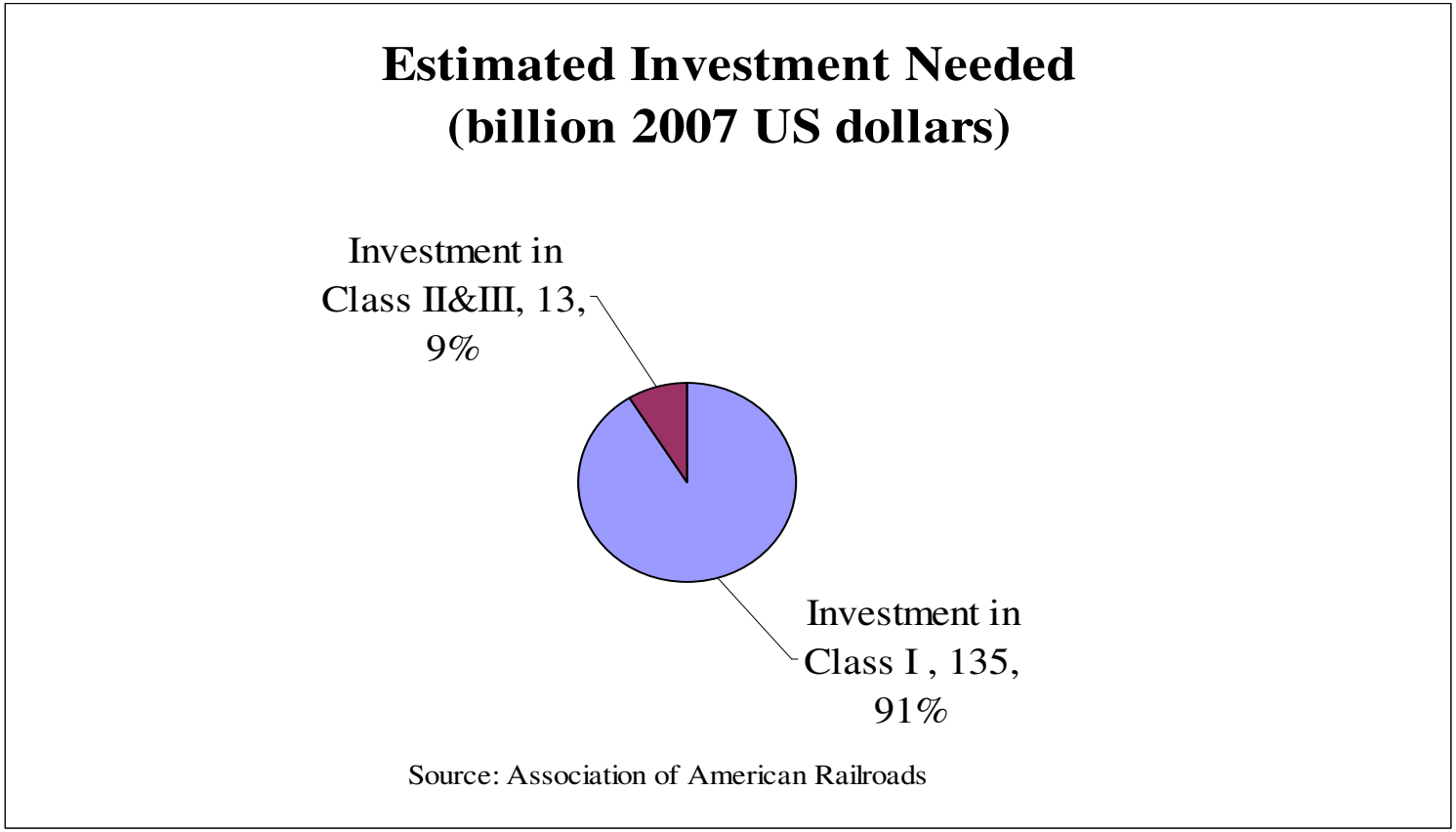


- Are railroads capable of moving large volumes of ethanol and DDGS at a rate customers are willing to pay?

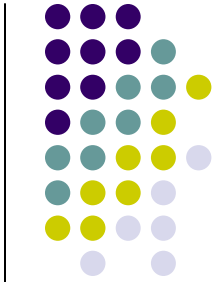
- Answer: No

Capacity Constraints of Railroads

Need $148 billion to be invested in rail infrastructure

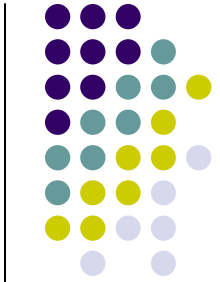


Ethanol Transportation Implications



- 90% of the ethanol production capacity is in 8 Midwestern States
- 80% of the population lives along coastlines
- Transportation cost is the 3rd largest producer expense after feedstock and energy

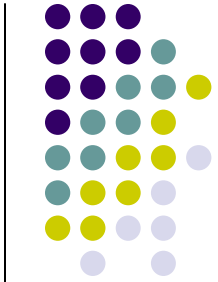
National Study Findings



- Tight capacity, limited resources
- High demand of liquid tank railcars
- High demand of tank car for ethanol movement
- Under-prepared terminal market
- Inland barge will be an alternative
- Transportation problem impedes the usage and export of DDGS

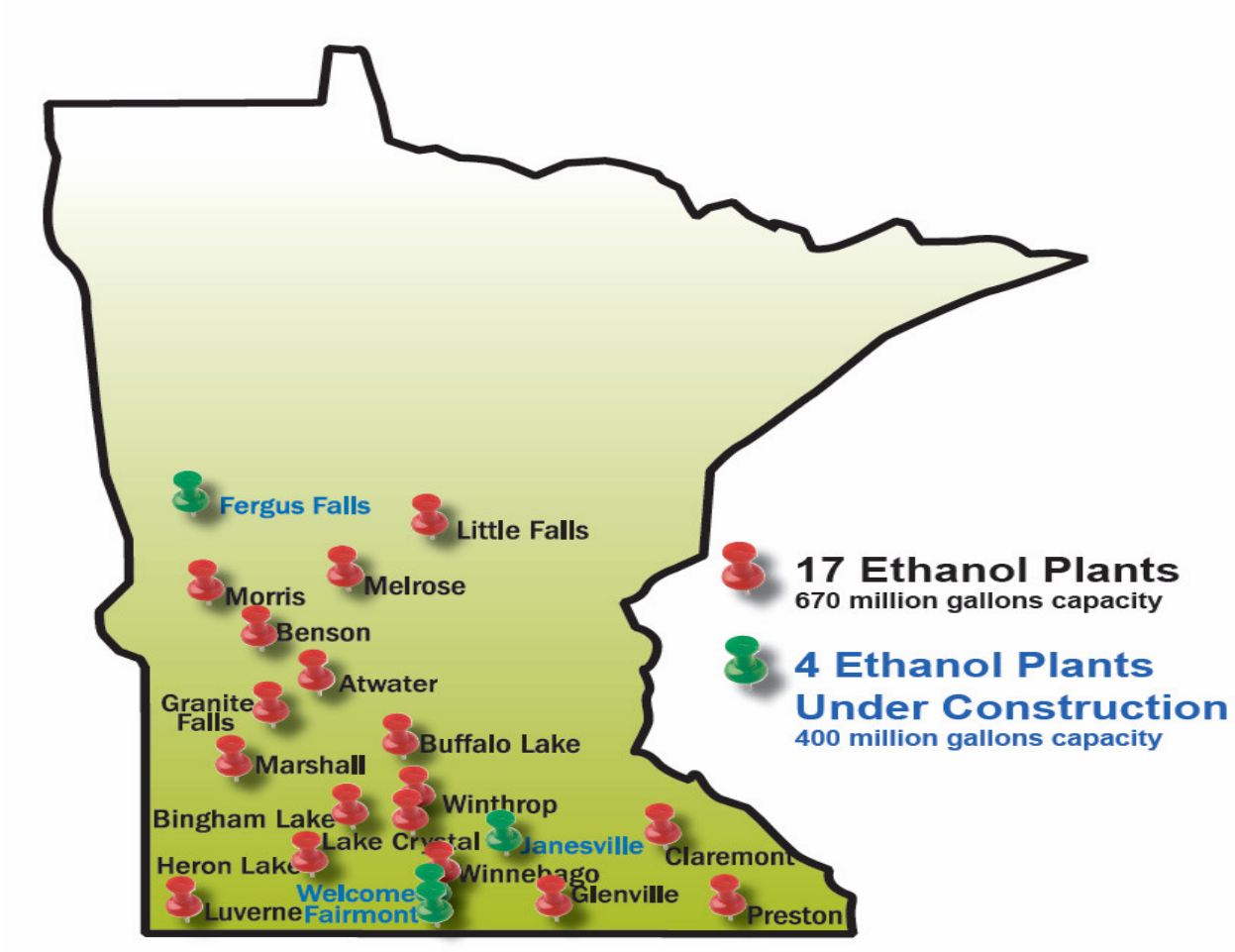
Sources: Informa Economics, NASS, USDA (2007)

Survey in Minnesota

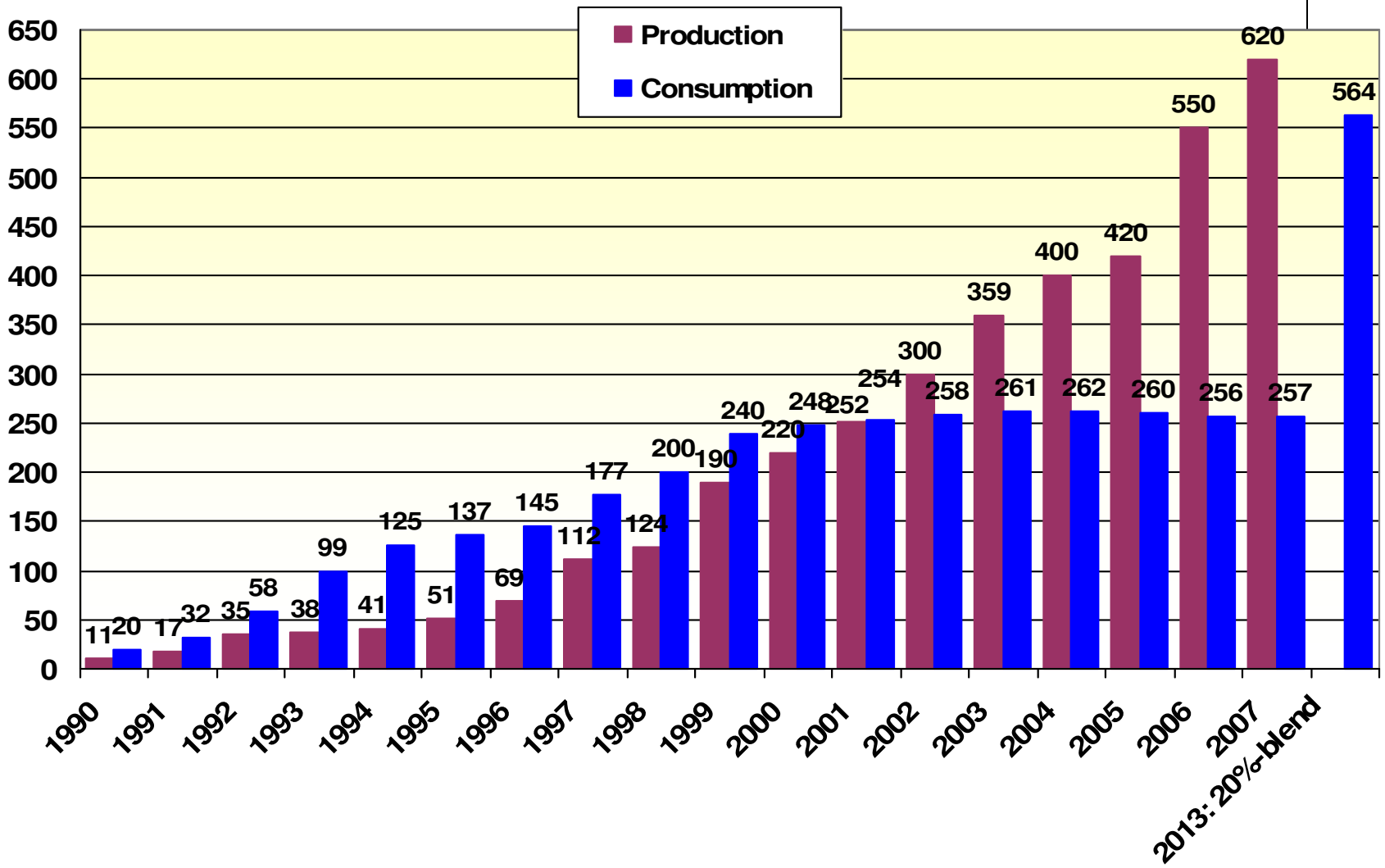


- Marketing and logistics of ethanol and DDGS
- Pressing issues with current transportation systems
- Opinions on the services provided by Class I railroads and Class II&III railroads
- Future transportation needs
- Opportunities for Class II&III railroads

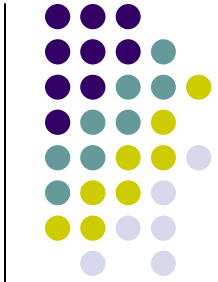
Ethanol Plants in Minnesota



Ethanol Production in Minnesota



E20 (20% blend of ethanol fuel)

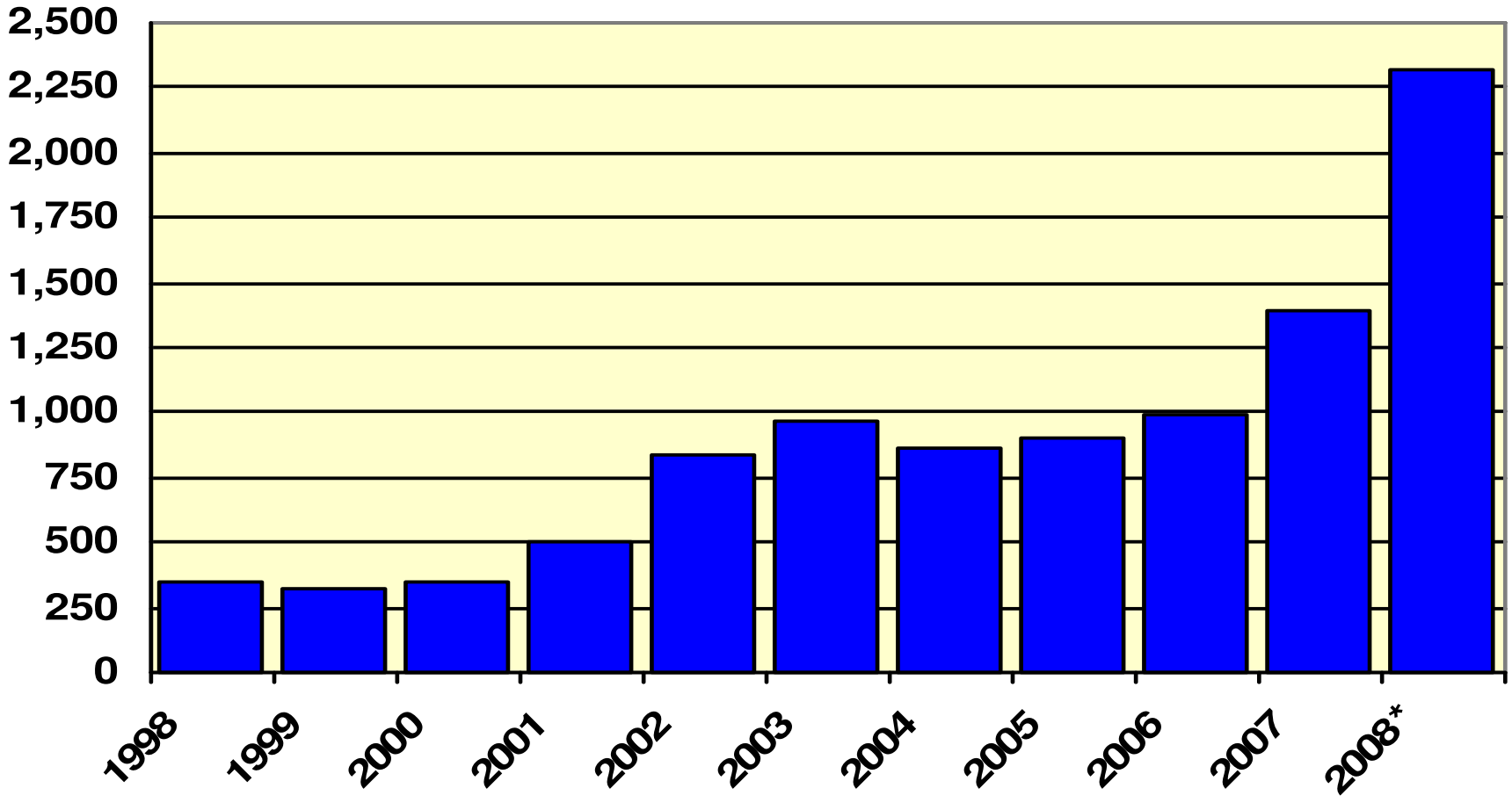


- **University of Minnesota** and **State University Mankato** concludes:
  - E20 will perform as well as those running on E10/gasoline
  - No problem for engine components/fuel systems
  - Minnesota Legislature, Minnesota Corn Growers Association, and Renewable Fuels Association sponsored the research
- Ethanol mandate increase in Minnesota
  - ≥ 20% ethanol in 2013
  - www.mda.state.mn.us/renewable/ethanol/default.htm

Distillers Dried Grains with Solubles--DDGS

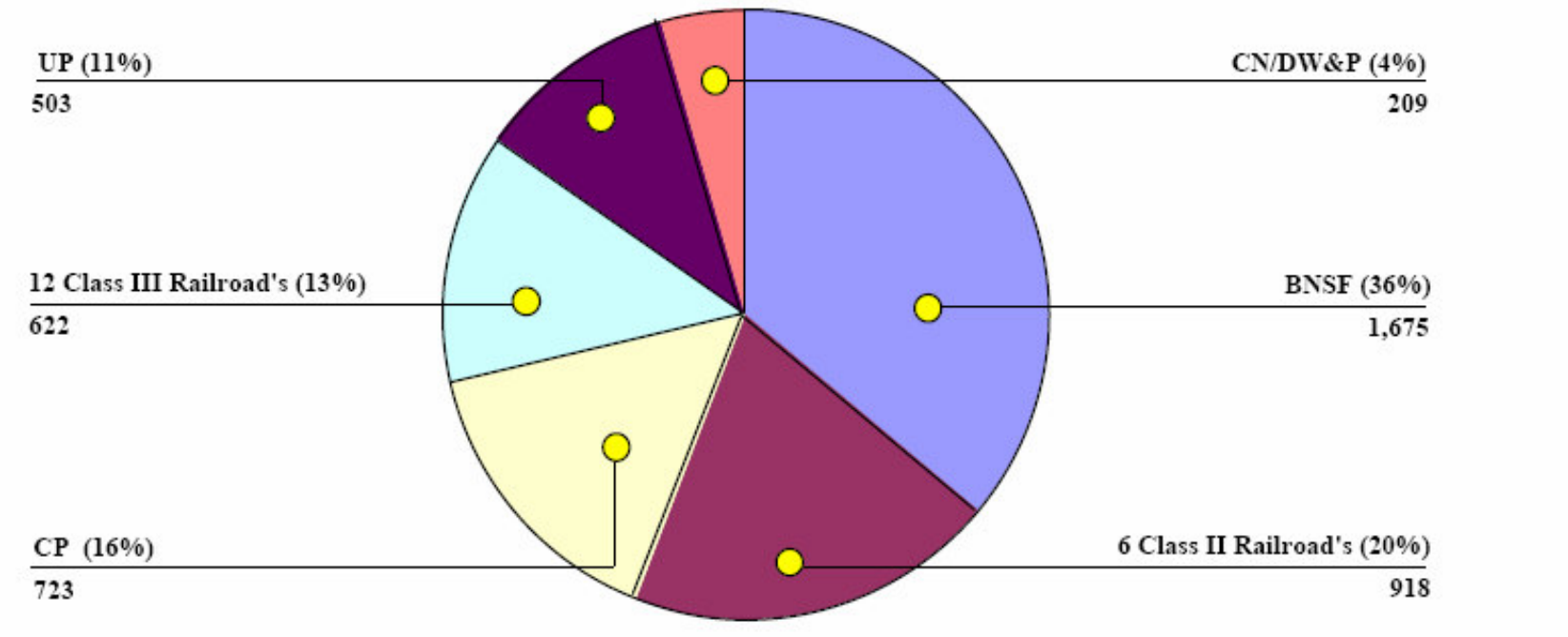
- Mid-level protein feed
- 28% crude protein
- Feed value higher than corn
- Poorer bulk density than corn
- Perishability and transportation issues

DDGS Production in Minnesota

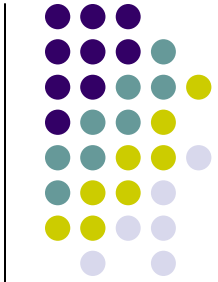


Railroads in Minnesota

- Four Class I Railroads: BNSF, UP, CN, CP
- Six Class II Railroads and 12 Class III Railroads



Survey Results—Ethanol



- Utilize unit train
  - BNSF tariff rate, from southwest MN to Ft.Worth, TX
    - Single-car: $4825.00
    - Gathered train: $3925.00
    - Unit train: $3425.00 ($1400.00 less than single-car)
- Rising share of ethanol marketed by marketers
- Increased role of regional (short line) railroads

Source: www.bnsf.com

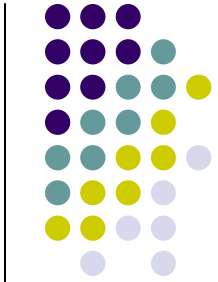
Survey Results—DDGS Marketing

- Domestic market is the major market
  - 50% of DDGS is exported to foreign market
  - Asia and North America (Mexico,Canada & Carribean)
- Reasons for exporting DDGS
  - Improved transportation infrastructure and handing capacity
  - High price and increasing demand
- Reasons for not exporting DDGS
  - Not enough quantity of DDGS production
  - Increasing local demand
  - High transportation costs
  - Lack of international marketing resources

Survey Results—Future Needs and Changes

- An increase of ethanol and DDGS shipments
- A larger local market for DDGS
- Transport ethanol via pipeline
- Need for more containers for exporting DDGS

Survey Results—Pressing Issues



- Slow rail car turn-around time (30-60 days)
- Limited destination to handle unit train
- The rail tracks need improvement
- High transportation cost and services are not reliable
- Concern on the transportation capacity
- Railroads are "apprehensive" about public funding

Survey Results—Class I VS Class II&II

- Reason for located on Class I railroads:
  - Primary carriers
- Reason for located on Class II&III railroads:
  - Location on or close to Class I were not available
  - Neutrality of Class II&III in destinations
  - Ease of doing business
  - Close to corn market
  - Support local community development
  - Class I railroads are difficult to work with and slow

Opportunities for Class II&III Railroads

- Primary carriers to haul agricultural products to nearby Class I railroads
- Reputation for “ease of doing business”
- More flexible and cooperative
- Development of local community

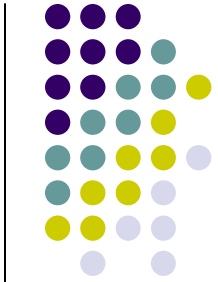
Limitations of Class II&III Railroads

- Maximum Gross Weight for Freight Cars Required by Class I Railroads (pounds per car)
  - Recent: 263,000 lbs
  - New: 286,000 lbs
  - Considering: 315,000 lbs
- Potential for reducing the capacity and access for shippers on short lines

Paper Barrier and Switching Fee

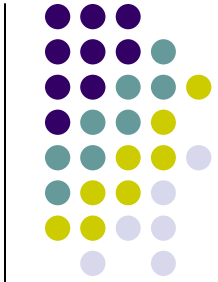
- Switching fee between short lines and Class I railroads
  - Add 2-5 cents per gallon
  - $1-2.5 million per year/50 million gallons
- Rely on the Class I railroads for timely delivery of empty freight cars

What We Can Do



- Policy Support
  - Railroad Competition and Service Improvement Act of 2007—introduced in May, 2007
    - Effective competition among rail carriers
    - Ensure reasonable rates
    - Ensure consistent, efficient and reliable service
    - Minnesota senators are co-sponsors of this Act

What We Can Do



- Public-private partnership
  - Minnesota's Statewide Freight Plan (MnDOT 2005)
  - Minnesota Rail Service Improvement (MRSI) Program
    - Offer low or no-interest loans
      - Preserve short line and regional rail service
      - Rehabilitate rail lines
      - Provide shipper facilities

Thank you!

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